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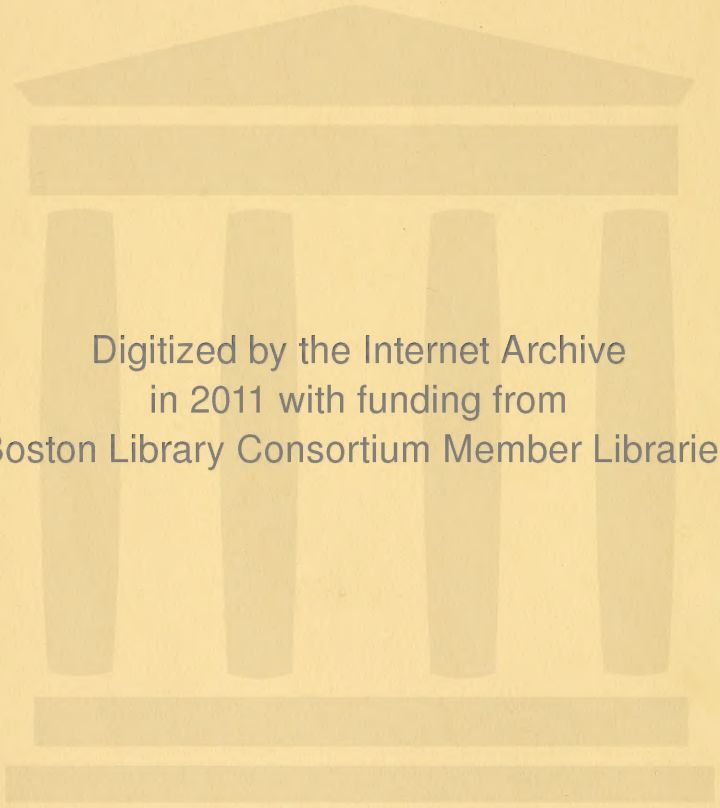
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MASSACHUSETTS STATE COLLEGE

Catalogue of the College
1935-36

STATE COLLEGE BULLETIN
Amherst, Massachusetts

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The College Catalogue for the sessions of 1935–36 is part of the Seventy-third Annual Report of the Massachusetts State College and as such is part II of Public Document 31. (Sec. 8, Chapter 75, of the General Laws of Massachusetts.)

The announcements concerning admission, courses and general information apply to the sessions of 1936–37.

LEGISLATION PERTAINING TO THE COLLEGE.

Without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and mechanic arts in such manner as the legislatures of the states may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life.—*Act of Congress, July 2, 1862.*

THE COLLEGE CHARTER. — "The leading object of the college shall be to teach subjects relating to agriculture and the mechanic arts, so as to promote liberal and practical education. Its curriculum may include other scientific and classical studies and shall include military tactics." — *From Chapter 75 of the General Laws of Massachusetts.*

FOREWORD.

This bulletin presents the catalogue of the College for the sessions of 1935–36 and announcements concerning courses, admission, etc., for the sessions of 1936–37.

The College reserves, for itself and its departments, the right to withdraw or change the announcements made in its catalogue.

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THE TRUSTEES

Organization of 1936.

Members of the Board.

	Term Expires
Howard S. Russell of Waltham	1936
Mrs. Lottie A. Leach of Walpole	1937
James F. Bacon of Boston	1937
Mrs. Lena Edge Wilson of Pittsfield	1938
Harold L. Frost of Arlington	1938
David H. Buttrick of Arlington	1939
David J. Malcolm of Charlemont	1939
John F. Gannon of Pittsfield	1940
Davis R. Dewey of Cambridge	1940
Joseph W. Bartlett of Boston	1941
Philip F. Whitmore of Sunderland	1941
John Chandler of Sterling Junction	1942
Frederick D. Griggs of Springfield	1942
Nathaniel I. Bowditch of Framingham	1943
William C. Monahan of Framingham	1943

Members Ex Officio.

His Excellency James M. Curley, *Governor of the Commonwealth.*
Hugh P. Baker, *President of the College.*
James G. Reardon, *Commissioner of Education.*
Howard Haines Murphy, *Commissioner of Agriculture.*

Officers of the Board of Trustees.

His Excellency James M. Curley of Boston, *President.*
Nathaniel I. Bowditch of Framingham, *Vice-President.*
Robert D. Hawley of Amherst, *Secretary.*
Fred C. Kenney of Amherst, *Treasurer.*

Officers of College Administration.

Hugh P. Baker, D.Oec., LL.D., South College—President's House
President.
William L. Machmer, A.M., South College—25 Amity St.
Dean.
Fred C. Kenney South College—8 Mount Pleasant
Treasurer.
Fred J. Sievers, M.S., East Experiment Station—35 Fearing St.
Director of the Experiment Station and Director of the Graduate School.
Roland H. Verbeck, B.S., South College—14 Orchard St.
Director of Short Courses.
Willard A. Munson, B.S., South College—101 Butterfield Ter.
Director of Extension Service.
Robert D. Hawley, B.S., South College—South Amherst
Secretary.
Basil B. Wood, A.B., The Library—Amity St.
Librarian.
Emory E. Grayson, B.S., South College—37 Cottage St.
Director of Placement.
George E. Emery, B.S., Memorial Hall—29 East Pleasant St.
Field Secretary.
Francis C. Pray, M.S., South College—25 Fearing St.
Assistant College Editor.

CALENDAR

1936.

Jan. 22–Feb. 1, Wednesday–Saturday	Final Examinations
Feb. 1, Saturday, 12 M.	First Semester ends
Feb. 6, Thursday, 11.00 A.M.	Second Semester begins, Convocation
Feb. 22, Saturday	Holiday, Washington's Birthday
March 28–April 6, Saturday, 12 M.–Monday, 8.00 A.M.	Spring Recess
April 20, Monday	Holiday, Observance of Patriots' Day
May 30, Saturday	Holiday, Memorial Day
May 29–June 1, Friday–Monday	Stockbridge School Commencement
May 27–June 5, Wednesday–Friday	Final Examinations
June 5–8, Friday–Monday	Commencement
June 11–13, Thursday–Saturday	Entrance Examinations
July 6–August 15	Summer School
Sept. 16–19, Wednesday–Saturday	Entrance Examinations
Sept. 21, Monday	First Semester begins for Freshmen
Sept. 23, Wednesday, 2.00 P.M.	Opening Convocation for all students
Sept. 24, Thursday, 8.00 A.M.	All class schedules start
Oct. 5, Monday	First Semester begins for Stockbridge School Freshmen
Oct. 6, Tuesday	First Semester begins for Stockbridge Seniors
Oct. 12, Monday	Holiday, Columbus Day
Nov. 11, Wednesday	Holiday, Armistice Day
Nov. 25–Nov. 30, Wednesday, 12 M.–Monday, 8.00 A.M.	Thanksgiving Recess
Dec. 19–Jan. 4, Saturday, 12 M.–Monday, 8.00 A.M.	Christmas Recess

1937.

Jan. 25–Feb. 3, Monday to Wednesday	Final Examinations
Feb. 3, Wednesday, 5.00 P.M.	First Semester ends
Feb. 8, Monday, 8.00 A.M.	Second Semester begins
Feb. 22, Monday	Washington's Birthday
Mar. 27–Apr. 5, Saturday, 12 M.–Monday, 8.00 A.M.	Spring Recess
Apr. 19, Monday	Holiday, Patriots' Day
May 31, Monday	Holiday, Observance of Memorial Day
June 2–11, Wednesday–Friday	Final Exams
June 4–7, Friday–Monday	Stockbridge School Commencement
June 11, Friday	Second Semester Closes
June 11–14, Friday–Monday	Commencement
June 17–19, Thursday–Saturday	Entrance Examinations

INFORMATION CONCERNING THE COLLEGE

HISTORICAL SKETCH.

One of the outstanding achievements of the middle of the nineteenth century was the remarkable development in the field of science. This, in turn, brought about great changes in industry, transportation and agriculture and stimulated the desire for new information and further training. People were enthusiastic about the possibilities of the future. It is not surprising, therefore, that scientific courses gradually found their way into the academies and colleges. This was not without opposition from the friends of the old classical training, however. In many instances institutions founded along literary and philosophical lines did not favor the introduction of courses based on the needs of students desiring to perfect themselves in the technical principles and practices of the arts and industry. The demand for such courses increased nevertheless. It was evident that the old order of education was changing but at the time the new was not apparent. It was under such conditions that the Massachusetts State College had its birth.

The Morrill Act.

This demand for technical education finally crystallized into a bill before Congress known as the Morrill Act of 1862 endowing colleges for this purpose in every state of the Union. The original bill was framed by Senator Justin L. Morrill of Vermont and its final enactment obtained under his leadership. This bill provided in each state for "the endowment for and maintenance of at least one college where the leading object shall be, without excluding other scientific and classical studies and including military tactics, to teach such branches of learning as are related to agriculture and the mechanics arts in such manner as the legislatures of the states may respectively prescribe in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." Massachusetts accepted the provisions of the Morrill Act in 1863 by founding a new college at Amherst to be known as "Massachusetts Agricultural College" and Chapter 75 of the General Laws of the Commonwealth states that "the leading object of the College shall be to teach subjects relating to agriculture and the mechanics arts so as to promote liberal and practical education. Its curriculum may include other scientific and classical studies and shall include military tactics."

Founding and Early Growth of the College.

The Trustees of the Massachusetts Agricultural College were incorporated in 1863 and officers were appointed in that year. It was not until October 2, 1867, however, that the institution at Amherst was formally opened to students. At that time there were four teachers on the faculty and four wooden buildings on the campus. The number of students steadily increased during the first term and by December, 1867, forty-seven had been admitted. From this modest beginning the College has grown steadily and its influence has been felt in many parts of the world. On April 15, 1931, the name of the institution was changed by legislative enactment to Massachusetts State College.

Scope of the Institution.

In a sense, experimental work is as old as the institution, for during its earliest years some very important investigations were carried on by the instructors. Research work was established as a separate unit, however, in 1882, when the State provided for the establishment of an agricultural experiment station here. In 1887 another experimental unit, the Hatch Experiment Station, was provided by Federal appropriation. These two stations were combined in 1895 and have since been known as the Massachusetts Agricultural Experiment Station.

State law also provides for the maintenance at this College of a Control Service the purpose of which is to regulate the sale of certain agricultural products for the protection of purchasers and also to eliminate certain diseases of poultry.

The Extension Service of the College was established in 1912 and was first supported by grants of Federal Funds in 1914. This division of the College under-

takes the large responsibility of teaching adults and boys and girls throughout the State, who cannot come to the College for instruction, better methods in agriculture and home-making.

Resident Instruction.

Opportunities for resident instruction have expanded greatly since the founding of the College in 1863. In addition to the four-year course leading to the Bachelor of Science degree, there are now offered such short courses as the Winter School, Summer School, and the two-year course in practical agriculture known as the Stockbridge School. The Graduate School offers opportunity for study for advanced degrees. The curriculum of the four-year course includes comprehensive courses in Agriculture, Home Economics, Horticulture, Humanities, Landscape Architecture, Physical and Biological Sciences, Physical Education and Social Sciences. The aim is to give to each student as high a degree of proficiency in some particular branch of learning as is possible without sacrificing the breadth of knowledge and training which should characterize the well-rounded college course.

THE COLLEGE CAMPUS.

Hand in hand with this steady growth of the College, there has come a marked expansion in physical equipment. The original farm of 1867, with its run-down fields and degenerated apple orchards cut up here and there by old Virginia rail fences and hedge rows has metamorphosed into one of the most attractive college campuses in New England. A brief statement of land, buildings and equipment will show to what extent the original four wooden buildings have been out-grown.

Location and Lands.

The State College is located in Amherst, a town of about six thousand people, overlooking one of the most picturesque sections of the Connecticut Valley. From the standpoint of teaching material in the field of science and agriculture, the location is ideal. Amherst is ninety-seven miles from Boston and may be reached by the Central Vermont Railroad, or by bus connections from Northampton, Holyoke, Greenfield, and Springfield. The campus consists of a tract of approximately seven hundred acres, lying about a mile north of the village center. In addition the college owns another area of seven hundred and fifty-five acres located about six miles north of the campus on Mount Toby. This is used for a demonstration forest.

The College also operates a horticultural field station at Waltham and a cranberry field station at Wareham.

Buildings and Equipment.

The campus is laid out in the form of an oval attractively set off by the college pond in the center. Around this oval are grouped the main buildings of the college. In the following list the buildings are presented in order about this oval.

South College. — Here are located the administrative offices, including the offices of the President, Dean, Treasurer, Secretary, the Extension Service, Short Courses, Placement Service and Women's Adviser. The Department of Agricultural Economics also has offices here. Erected 1885.

North College. — Primarily a freshman dormitory accommodating about seventy-five students. On the first floor is located the College Store and Barber Shop. Erected in 1868.

Flint Laboratory. — The work in Dairy Industry is carried on here. The building is well equipped with modern machinery for the production of market milk, ice-cream, butter and cheese. This building was erected in 1911 and was named in honor of Charles L. Flint, fourth president of the college. On the second floor is located the foods laboratory of the Department of Home Economics.

Stockbridge Hall. — Here are located the departments of Agronomy, Animal Husbandry, Agricultural Engineering, Farm Management, Poultry Husbandry, Education and English. In addition to the lecture rooms and offices are laboratories for soil fertility, field crops, poultry, and a drafting room for engineering. The clothing and house furnishing laboratories for the Home Economics Department are also located here. In the rear of the building are the greenhouse and head house used by the Department of Agronomy for work with crops and soils. A

special reference library for the Division of Agriculture is on the second floor. Bowker Auditorium, the largest auditorium on the campus, is also in this building. In has a seating capacity of nine hundred and is named in honor of William H. Bowker, a member of the first graduating class, later a Trustee of the College, and one of the pioneers in the fertilizer industry. Stockbridge Hall was erected in 1914 and named in honor of Levi Stockbridge, a former president and professor of Agriculture in the college.

Horticultural Manufactures Laboratory. — Erected in 1929. Both research and instructional work in food preservation are carried on here. The laboratories are well equipped with modern apparatus used in this rapidly developing field.

Grinnell Arena. — Erected in 1910 primarily for livestock judging. An abattoir was constructed in 1930 as an addition to the original building. Named in honor of James S. Grinnell, for twenty-two years a trustee of the College.

Farley 4-H Building. — This building was constructed in 1933 as an assembly hall and general headquarters for 4-H Club activities upon the campus. The cost of the building was met by gifts from club members throughout the state.

Agricultural Engineering Laboratory. — Included in this laboratory for students of Agricultural Engineering are a carpenter shop, general repair shop, and a laboratory for farm machinery and motors. The building was erected in 1916.

Draper Hall. — This is the college dining hall. Service is by cafeteria style and there are seating accommodations for about four hundred and fifty at one time. There is a small banquet room on the second floor and several dormitory rooms. Erected 1903 and an addition in 1912, and named in honor of James Draper, for twenty years a trustee of the college.

Goessmann Laboratory. — This is a modern chemical laboratory. The building is approximately two hundred feet by eighty feet and contains eight large laboratory rooms, an auditorium, a chemical library, and lecture rooms. The east wing of the third floor is occupied by the research professors in Chemistry of the Experiment Station. In addition to the work in Chemistry the class work in German is held in this building. Goessmann Laboratory was erected in 1924 and named in honor of Charles A. Goessmann, the first professor of Chemistry at the college.

West Experiment Station. — The state control work is centralized here. Fertilizers, seeds, feeds and dairy glassware are analyzed or inspected in accordance with the state law, to determine whether or not they meet their guarantee. Erected in 1886.

East Experiment Station. — The office of the Director of the Experiment Station and other administrative offices of the Experiment Station are located in this building.

Abigail Adams House. — This is a modern girls' dormitory accommodating about one hundred students. It was erected in 1919 and named for Abigail Adams, a staunch believer in farm life, the wife of John Adams, second President of the United States. In the rear of the building is an athletic field used in connection with the physical training of the women students.

The Homestead. — Girls majoring in Home Economics receive their Home Management practice in the Homestead. It is a remodelled colonial farmhouse equipped with all the modern conveniences of the home.

Thatcher Hall. — This is a commodious dormitory for freshman men students constructed in 1935. It contains library, recreation rooms and facilities for 150 students. It is named in honor of the late Roscoe W. Thatcher, tenth president of the College.

Marshall Laboratory. — This building, erected in 1915, is especially designed to carry on work in Physiology and in Bacteriology as it relates to soil, industry, dairying, foods and public health. There are four class laboratories, several private laboratory rooms and offices and a lecture room. In addition there are incubator rooms, sterilizing rooms, hood rooms, washing rooms, inoculating rooms, weighing rooms, an animal room, a photographic and dark room, and a sub-basement refrigerator room. There is also a well-equipped library containing books and current periodicals useful in the conduct of bacteriological and physiological study. The building is named in honor of the late Dr. Charles E. Marshall, head of the Department of Microbiology from 1912 to 1927.

Infirmary. — The infirmary is composed of two small cottages and a large ward

building all located on the hillside north-east of Marshall Laboratory. The facilities are especially designed for the care of sick and injured students. A trained nurse is on duty at all times.

Physics Building. — This is a wooden building erected in 1867. It contains a well-equipped laboratory for work in college Physics and also one lecture room.

Wilder Hall. — Here are located the departments for Landscape Architecture and Horticulture. The building is chiefly devoted to classrooms, drafting rooms, and offices. It was erected in 1905 and named in honor of Marshall P. Wilder, a pioneer in the movement for agricultural education in Massachusetts and one of the first trustees of the college.

Fisher Laboratory. — This is a well planned and equipped fruit packing and storage house. It includes six refrigerator rooms, four storage rooms not refrigerated, one large laboratory room, one class room besides ample storage space for fruit packages and equipment. The equipment for the building itself includes four types of apple sizers, packing tables and box and barrel presses of various types, besides all kinds of packages with smaller equipment necessary for thoroughly modern work in grading and packing fruit. This building is used by the Pomology Department and was named in honor of Jabez Fisher, one of the foremost, early horticulturists of the State. Erected 1910.

French Hall. — French Hall houses the departments of Pomology, Floriculture, Forestry and Vegetable Gardening. The classroom work in Economics, Sociology, French and Spanish is also given here. Just to the rear of the building is the new Durfee range of greenhouses, devoted to the growing of carnations, roses, chrysanthemums, sweet peas, etc. One house is maintained as a conservatory and contains a collection of plants used primarily for decorative purposes. Two houses are devoted to greenhouse vegetables. The old Durfee range located just to the north of French Hall is used chiefly for the growing and maintenance of a collection of conservatory plants. There are also many of economic value such as the bamboo, camphor tree, guava, palm, etc. French Hall was erected in two sections; the first in 1908, the second in 1913. It was named in honor of Henry F. French, the first president of the college.

Clark Hall. — Here are located the offices, lecture rooms and laboratories of the Department of Botany. In addition to the main building, there is a greenhouse used for research and laboratory purposes. The herbarium contains about twenty thousand sheets of seed plants and ferns, twelve hundred sheets of liverworts and mosses and a collection of twenty-five thousand specimens of fungi. Erected in 1906 and named in honor of William S. Clark, president of the college 1867 to 1879.

Fernald Hall. — This building, erected in 1909, was named in honor of Professor Charles H. Fernald, who served the college for twenty-four years, built up a strong department in Zoölogy, created the department of Entomology, and acted as Director of the Graduate School. Fernald Hall houses the Department of Entomology, Zoölogy and Geology. In addition to laboratories, lecture rooms, and offices, there is a Geological Museum, a Zoölogical Museum and a collection of over 160,000 insects. Material in these collections is available for study and for exhibition purposes.

Mathematics Building. — This building contains classrooms for instruction in mathematics and surveying. There is also a well equipped drafting room, and a small one devoted to blue-printing. Offices of the Federal Forestry service are located on the second floor.

Paige Laboratory. — The work in Veterinary Science is located in this building. In addition to the class, lecture, and laboratory rooms, there are the laboratories for Research work on animal diseases and Control Service in Poultry Disease Elimination. The museum contains a growing number of anatomical and pathological specimens, most of which are used for teaching purposes. In the rear of the building are the stables for housing both laboratory and larger animals under isolation conditions for dissection, post mortem examinations and for incineration purposes. Paige Laboratory was erected in 1898 and named for James B. Paige, professor of Veterinary Science from 1891 to 1922.

Physical Education Building. — This building dedicated at Commencement in 1931, offers splendid modern facilities for physical education including a swimming

pool 75 by 30 feet, an exercise hall 150 by 180 feet, locker rooms, baths, and othre modern facilities. Of the total cost of $287,000, alumni and friends of the college contributed $115,000; the remainder was appropriated by the State Legislature.

Drill Hall. — This building houses the Department of Military Science. It also contains locker and dressing rooms for women students and a large exercise hall for their work in physical education.

Alumni Field. — This tract of land was transformed into an Athletic Field, containing a baseball diamond, football field, and cinder track, by the Alumni and friends of the college. Completed 1915, extended in 1935.

Memorial Hall. — The social center of student life is Memorial Hall. It was erected by the Alumni, students, faculty and friends of the college in memory of those men of this college who died in the World War. In the basement are bowling alleys, pool tables, and game rooms. On the main floor are eight offices for the leaders of various student activities, a large reading room and lounge and a beautiful Memorial Room in which is a tablet bearing the names of the sons of the college who gave their lives in the Great War. On the second floor is an auditorium seating 350 persons. This room is also used for college dances. Memorial Hall was erected in 1921.

Old Chapel. — Until this year this building has been occupied by the College Library and in former years, it served as both library and chapel. It is now to be used as a classroom and office building for the Division of Social Sciences. It is a fine granite structure erected in 1885.

Goodell Library. — This fine new building completed in 1935 houses the College Library. This library contains one of the best collections in agriculture and related sciences in the country, with especial strength in entomology, botany, chemistry, horticulture, landscape architecture, soil science, and animal husbandry, but with considerable collections, also, in literature, history, economics, and sociology. There are over 100,000 bound books, and over 50,000 classified pamphlets giving most recent information. The periodical file contains over 550 current magazines, both scientific and popular, and a careful selection of newspapers, together with many periodical publications of learned societies. The Library is unusually rich in files of journals and proceedings of Experiment Stations and learned societies. The building is open on week days from 8 A.M. to 10 P.M., and from 1.30 to 4.30 and 7 to 9 P.M. on Sundays during semesters and with somewhat shorter hours during vacations and Summer School.

The building is named in memory of Henry Hill Goodell, President of the College from 1886 to 1904 and College Librarian from 1886 to 1898.

Power Plant. — Heat and light are supplied to all the buildings on the campus from a central power plant. This was erected in 1902 and has been subsequently remodeled.

Farm Buildings, Land and Equipment.

College Farm and Barns. — The college farm consists of 240 acres located just west of South College. Most of it is suitable for cultivation and is operated in regular rotation. Much of the farm as it now stands has been made productive by tile draining and clearing the land of brush and stumps. The principal crops raised are those which can be utilized by the livestock, together with some cash crops such as cabbage, carrots, potatoes, and hay. For instructional work the farm is available for study in field crops, planning of crop rotation, practical field operation of farm machinery and tractors and farm management. The livestock of the farm consists of about 200 head of registered cattle which are excellent representatives of the Ayshire, Guernsey, Holstein, Jersey, Milking Shorthorns, and Hereford breeds, a considerable number of registered Berkshire and Chester White swine, a flock of about 100 Shropshire and Southdown sheep and 30 Percheron horses. These animals are used chiefly for demonstrational and instructional work in feeding and herd management and in the teaching of correct types by much practice in judging. The farm buildings are model structures for their various purposes. They were erected in 1909 and subsequently. The dairy barns contain efficient and modern equipment for their respective purposes. The sheep barns and piggery are located several hundred yards from the dairy barns.

Cavalry Stable. — This stable has a capacity for the sixty horses which are used by the college cavalry troop. Erected in 1925.

Poultry Plant. — The college poultry plant consists of about twenty acres of land in addition to the various buildings that go to make up a modern poultry plant. Although only eight acres of land comprising the plant are college-owned this quantity permits for a three-year growing rotation. The plant will accommodate 2,000 laying birds and has growing facilities for about 7,000 chicks. The incubator capacity of the plant is approximately 12,000 eggs at one time. Located about one-half mile east of the college, on East Pleasant Street, is the experimental poultry farm which accommodates about 1,200 adult birds and has hatching facilities for about 3,000 chicks. Here experiments on breeding poultry for egg production and disease control are carried on under strict quarantine.

The Hatch Barn. — This structure, erected in 1891, was originally planned to accommodate experimental work in the feeding of livestock. As a result of these facilities many valuable discoveries were made. Progress, however, had reached the stage where, because of the influence of a more artificial environment and a less natural food supply, it became necessary to intensify the former feeding programs. To meet this requirement this building is being completely remodeled for the accommodation of the small animals necessary for investigational work in this field. When fully completed this structure, in its modernized form, should provide as good facilities for investigation in the field of nutrition, both human and animal, as are available in any Land Grant College in the country.

Experiment Station Barns. — These buildings contain the equipment and animals used in connection with the work of the Experiment Station.

Orchards and Vineyards. — The college orchard contains about 20 varieties of peaches, 25 of plums, 20 of pears, and 100 of apples. Common varieties of grapes are grown in the vineyards and with the various approved trellis systems. These orchards are used for teaching material in Pomology.

Vegetable Gardens. — Here are grown the class material used by the vegetable gardening department.

Mt. Toby Demonstration Forest. — This is an area of approximately 750 acres located on Mt. Toby. It contains the various types of forest growth found throughout the State. It serves as a field laboratory in forestry. Students have the privilege of working out problems in silviculture, forest mensuration and management. Improvement cuttings, cuttings for utilization and forest planning are conducted here also.

COURSES OF INSTRUCTION.

Courses Leading to a Degree.

Four-Year Course. — The degree of Bachelor of Science is granted to those students who satisfactorily complete the regular four-year course. Special arrangement is made for some graduates of county agricultural schools to receive the degree of Bachelor of Vocational Agriculture for four years of college work.

Five-Year Course in Landscape Architecture. — A five-year course is offered in Landscape Architecture leading to the degree of Bachelor of Landscape Architecture.

Graduate School. — The degrees of Master of Science, Master of Landscape Architecture and Doctor of Philosophy may be granted upon the completion of satisfactory study, research and a thesis.

Summer School. — Both graduate and undergraduate courses are offered in the six weeks' summer school and credits earned may apply toward the Bachelor's degree or advanced degrees.

Non-Degree Courses.

Several short courses in agriculture are offered which do not lead to a degree. These are for the benefit of those who are not prepared to take the degree course or who desire only a practical training in modern agriculture methods.

Stockbridge School of Agriculture. — This is a two-year course in practical agriculture offering a high type of training to those who wish to enter some special agricultural enterprise. A separate descriptive catalogue will be sent on request.

Winter School. — A ten weeks' practical course in agricultural and horticultural subjects begins about January first each year. The courses are so arranged that a student may choose such subjects as will enable him to specialize in the line of work in which he is most interested.

HEALTH SERVICE.

The College endeavors to safeguard the health of all students while on the campus, and for this purpose maintains a Physician as Supervisor of Student Health, a resident registered nurse, and an infirmary.

(1) Physical examination by the Health Service is required of all undergraduate students annually, or oftener if indicated. This examination is given to freshmen during matriculation week. *Evidence of a SUCCESSFUL smallpox vaccination is required.*

(2) The Supervisor of Student Health has offices in the Physical Education Building where he may be consulted during college hours.

(3) Infirmary — Its purpose is to furnish a suitable place for professional attention in case of illness or accident. The out-patient clinic is held here daily.

(4) Students are urged to consult the Supervisor of Student Health or the resident nurse at the first sign of physical disorder or for even minor accidents. Many severe illnesses and much lost time can be avoided by early or preventive treatment.

(5) The infirmary charges will be at the rate of $2 per day, and will be charged when one or more meals are obtained at the infirmary or when the student remains at the infirmary for one or more nights. A nominal charge may be made to out-patients for miscellaneous treatment of a minor character.

(6) In addition to the fee charged as specified in paragraph 5, the following additional expenses will be charged to the patient.

(a) *Nurses.* — In case a special nurse is required for the proper care of an individual the services and board of this nurse will be paid by the patient. Such a nurse will be under the general supervision of the resident nurse.

(b) *Professional Service.* — If a student requires continuous medical attention by a physician, he may be required to select his physician and become responsible for fees charged by that physician.

(c) *Supplies.* — Special medical supplies prescribed by a physician will be charged to the patient.

(d) *Laundry.* — Expense for personal laundry incurred by students while in the infirmary will be charged to the individual student.

STUDENT EXPENSES.

Student college expenses vary from approximately $450 per year to $600 for the normal economical student. First year expenses are usually greater than those of the other three years and there is less opportunity in this year to earn. It is, therefore, recommended to the entering student that he have available at least $450 with which to meet the expenses of the first year. Women students are recommended to plan on a minimum expense of $550.

The following summary of a year's expenses includes only those items which are strictly college costs and does not include amounts for clothing, travel, etc., which vary with the individual. Tuition for residents of Massachusetts is $100 and for others $220.

	Low	Normal
Tuition (citizens of Massachusetts)	$100.00	$100.00
Room in college dormitory or in private house	70.00	140.00
Board, $6.00 per week (College Dining Hall)	204.00	204.00
Laundry, 50 to 85 cents a week	18.00	30.00
Books, stationery and miscellaneous items	60.00	90.00
Student Taxes	25.00	25.00
	$477.00	$589.00

Initial Payment for Freshmen.

The initial payment required of freshmen at the time of fall registration is approximately $190 and is made up of the following items:

Tuition (citizens of Massachusetts)	$50.00
Room rent (dormitory)	50.00
Board (College Dining Hall to Dec. 1) (Approx.)	60.00
Military Uniform	15.00
*Student Tax	13.00
	$188.00

* This tax is for the support of student activities and entitles each student to free participation in the various enterprises represented.

Graduation Requirements.

No student will be graduated unless all bills due the college are paid on or before the Wednesday preceding the graduation exercise. If paid after that date and otherwise eligible he may graduate the following year.

Diplomas and letters of honorable dismissal will be withheld from all students who have not paid bills due the college or legitimate bills for room rent due fraternities or private individuals.

Advance Payment.

Prospective new students will be expected to make an advance payment of $15 to the Treasurer of the College as soon as they are notified by the Dean that they are accepted for admission. This will be considered as first payment on registration fees which will be due at time of matriculation in September and will be returned to the student if he advises the College before August 20 that he will not present himself for admission. If the student fails to notify the College of withdrawal before that date this preliminary payment will be forfeited and will be considered payment for the expenses involved in preliminary admission arrangements.

Refunds.

A student who leaves college for any reason before a semester is half completed will have refunded to him one-half the fees paid for that semester, but one who leaves after a semester is half over will be allowed no rebate of fees and a refund of only unused board and room charges.

College Fees.

All students are required to pay the College fees at the Treasurer's Office and file their registration cards in the Dean's Office within one week after the opening of College. Late registration costs the applicant $1.00.

Tuition. — Residents of Massachusetts are charged a tuition fee of $100 per year, payable in advance in two instalments of $50 each on the first day of each semester. For those who are not residents of Massachusetts, the tuition fee is $220 per year. Students entering from Massachusetts are required to file with the Treasurer a statement signed by town or city clerk, stating that the applicant's father or guardian is a legal resident of Massachusetts, unless applicant himself is of legal age, in which case a similar statement must be filed indicating his own legal residence.

Military Uniform. — All students taking military drill are required to make a deposit of $15.00 for the uniform. A rebate of this amount is made when the uniform is returned. Shoes are also furnished at approximately $3.50 per pair.

Board. — All freshmen students and all residents of college dormitories are required to board at the college dining hall. However, upperclass men, residents of dormitories, may board off-campus but only in approved dining halls which are under faculty supervision. Service is on a cafeteria basis and students pay in advance at the rate of approximately $6.00 per week, as follows:

At the opening of college	$60.50
At December 1	41.20
At the beginning of second semester	45.00
Upon return from spring recess	50.50

For absences of one week or more rebates at the rate of $5.50 per week may be granted provided the absence is authorized by the Dean and the rebate approved by the Treasurer. No rebates will be allowed for absences of less than one week.

If a student's home is nearby and for this or any similiar reason he is regularly absent from the campus over week ends, upon request from his parent or guardian, approved by the Dean of the College, he may board in the college dining hall for a five-day week (fifteen consecutive meals beginning with Monday breakfast) at the rate of 80 per cent of that paid for a seven-day week.

Excuses from compliance with these regulations concerning board shall be made only by the Treasurer of the College, who may require a recommendation in individual cases from the Student Health Officer, if the excuse is requested for health reasons, or from the Dean if the reason has to do with the student's academic opportunities.

ROOMS.

1. It is the policy of the Board of Trustees that freshmen men students and all women students in the four-year course shall be housed in campus dormitories in so far as accommodations are available.
2. Since sufficient dormitory accommodations for all of these students are not available at the present time, the following procedure will be followed to the end that those which we do have will be used to capacity and that assignments will be made with justice to all concerned.

Women Students.

a. All freshman girls will be assigned rooms in campus dormitories. The Adviser of Women may excuse any at her discretion for the reasons that they wish to live at home or that they have opportunity to earn board and room in a private residence.
b. All sophomore girls will live in campus dormitories to the extent that accommodations are available unless excused by the Adviser of Women.
c. Upper-class girls may live in campus dormitories if accommodations are available and their wishes should take precedence over the sophomore requirement. Their selection of rooms will be by lot under the supervision of the Adviser of Women.
d. At the close of each college year all sophomore girls will draw lots for dormitory rooms for the next year. Assignments to rooms will be made in accordance with the sequence fixed by this draw. As vacancies occur duing the year, the Adviser of Women will assign these vacated rooms to sophomore girls in accordance with this sequence and any student thus assigned to a dormitory room must take up residence there within two weeks after receipt of notice.
e. It is expected that not more than one sophomore girl from any one sorority will be assigned dormitory rooms in any single year under the provisions of "d."
f. Dormitory accommodations are available for about one hundred and twenty women students in the Abigail Adams House and Draper Hall. These rooms are furnished except for necessary bedding or linen and are cared for by the students occupying them. A list of approved off-campus rooms is kept by the Adviser of Women.

Men Students.

a. Assignment of rooms for men students is in charge of the Assistant Dean.
b. Upper-class men usually obtain rooms in fraternity houses or in private homes near the campus. Rent usually ranges from $2.50 to $4.00 per week, depending upon location and nature of the room. Such rooms are usually furnished.
   Students desiring aid in obtaining off-campus rooms should write to the Assistant to the Dean. The College does not secure these rooms for students but does keep a desirable list for student aid.
c. All freshman men students, unless granted permission to commute, will be required to room in college dormitories.
d. Dormitory accommodations are available at North College and Thatcher Hall. The rooms are furnished except for necessary bedding and linen. They are cared for by the students who occupy them.

3. The general supervision of housing of students is in charge of the Faculty Committee on Housing.

STUDENT EMPLOYMENT.

The College affords opportunity for part-time employment for a limited number of needy students. The number of applicants usually far exceeds the number of positions open so that no guarantee can be made that a student will find employment through the College. The College Placement Service renders every possible assistance to deserving students in search of employment. Besides such opportunities on the campus as waiters and kitchen helpers at the dining hall, janitors for buildings, assistants on the farm and in college laboratories, there are some opportunities in private homes and businesses in the town.

Prospective students should be cautioned not to depend too much upon their earning capacity in the first year. This year is the most difficult to finance for two

reasons. This is the student's first experience with college work and the usual result is that more time is required for study and less is therefore available for work. In this year also, since it is the first, the student is less familiar with his surroundings and not so able to locate work. Upper class men usually have most of the available jobs before the freshmen get acclimated. Students who are planning to enter college for the first time are therefore advised that they should have at least $450 available with which to meet the expenses of the first year. Some students stay out of school for a year after graduating from high school in order to work and save this amount.

N.Y.A. STUDENT EMPLOYMENT PROJECTS.

The College has been granted student employment funds by the Federal Government during the past two college years. The policy of the Federal Administration cannot be predicted in advance but it is safe to assume that as long as student relief projects are in effect our college will be a participant. The type of work to which students are assigned under N.Y.A. projects consists of the following: Clerical and office, library and museum, laboratory and research assistance, reading and grading papers and all other or miscellaneous types.

In addition to the college projects, community projects are organized consisting of the following types of work: Education, recreation, health and welfare and other miscellaneous types.

The rate of pay is 30 cents per hour. The positions are based on the average earning capacity of $15.00 per month. During the college year of 1935-36 twelve per cent of our students were assigned to positions under this project.

Special consideration is given to new students under these projects, hence while the general college policy does not encourage the new student to seek employment, yet one of the conditions under which the college participates in N.Y.A. projects is that new students receive their pro rata share.

SCHOLARSHIPS

Scholarships are awarded only to needy students of high character, whose habits of life are economical and who have maintained an average of at least 70% in their college course during the preceding year. Scholarships from the Crane and Ward Funds may be granted to applicants for admission to the College provided they are candidates for a degree, are in need of financial assistance and are able to meet the entrance requirements in full. Complete information relative to the student's need for financial aid must be presented before any application can be acted upon. Scholarships are paid in installments at the beginning of each semester in the form of a credit on the student's bill for that term. A scholarship may be discontinued at the close of any semester if the scholastic record of the recipient is unsatisfactory.

Blanks for applying for a scholarship may be obtained from the Dean of the College. Applicants from the three upper classes must file at the Dean's Office before the close of the college year an account of their income and expenses for that college year together with a statement of their resources for the coming year.

The following scholarships are available:

1. General scholarships:
   a. Nineteen scholarships of $60 each, known as the Porter L. Newton Scholarships.
   b. One scholarship of $60 known as the Mary Robinson Scholarship.
   c. One Scholarship of $60 known as the Henry Gassett Scholarship.
   d. One scholarship of $60 known as the Whiting Street Scholarship.
   e. Five scholarships of $60 each, known as the Charles A. Gleason Scholarships.
2. Scholarships limited to students from Berkshire County:
   At least ten scholarships of $60 or more, known as the Frederick G. Crane Scholarships.
3. Scholarships limited to women students:
   a. One scholarship of $150, known as the Helen A. Whittier Memorial Scholarship.
   b. One scholarship covering all college expenses of the freshman year, known as the Cotting Memorial Scholarship.

4. Scholarships limited to men students of Hampshire County:
   Twenty-five scholarships of approximately $100 known as the Wilbur H. H. Ward Scholarships. The Wilbur H. H. Ward Fund is administered by a Board of Trustees independent of the College. Applicants for these scholarships should write to Mr. Sumner R. Parker who may be addressed at the college.
5. Hood Dairy Scholarships:
   Eight scholarships for students of dairying provided by the gift of Dr. Charles H. Hood. These are awarded as follows:
   2 scholarships of $200 each awarded to one junior and one senior.
   2 scholarships of $100 each awarded to sophomores.
   4 scholarships of $50 each awarded to freshmen.

LOANS.

Loans may be granted to needy students requiring some assistance in meeting the expenses of the college course. All such loans must be paid before graduation. The student must present a properly endorsed note at the time a loan is made. With the exception of loans from the Lotta Agricultural Fund, money thus loaned is at a low rate of interest until the student graduates or severs his connections with the College. Applications for a loan may be made at the Treasurer's Office.

These loans are made available through the income from the following funds:

Danforth Keyes Bangs Fund. — This is a gift of $6,000 from Louisa A. Baker of Amherst, the income of which is to used annually in aiding poor, industrious and deserving students to obtain an education in the Massachusetts State College.

Lotta Agricultural Fund. — A limited number of loans are made to students from the income of this fund. Such loans are made without interest but only to deserving students of high scholastic rank. This fund is administered by a Board of Trustees independent of the College although loans are made only upon the recommendation of the President of the College.

Massachusetts Agricultural Club Fund.—The Massachusetts Agricultural Club has given $500 to be used as a loan fund at the Massachusetts State College to help out deserving students there who intend to go into agricultural work.

4-H Club Loan Fund for Boys. — A loan fund of $1,000.

4-H Club Loan Fund for Girls. — A loan fund of $100.

Vincent Goldthwait Memorial Loan Fund.—A gift of $5,000 from Dr. Joel E. Goldthwait in memory of his son.

SCHOLARSHIP HONORS AND AWARDS.

Dean's Scholarship Groups. — At the beginning of each semester a list is posted of those students who during the previous semester made a general average of 80 per cent or better. Three groups are recognized: those between 90 and 100; those between 85 and 90; and those between 80 and 85. Sophomores, Juniors and Seniors in the first two groups are allowed considerable freedom in the matter of class attendance.

Departmental Honors. — A student who has shown outstanding promise within some department and has maintained a general scholastic average of 80 per cent or better is permitted to apply for the privilege of registering for departmental honors. If his application is accepted by his department and the Honors Committee, he is allowed to pursue a course of independent study within the department of his choice throughout his senior year. This may include intensive reading, investigation or laboratory work in connection with some problem that he chooses for his consideration. The objective is to create on the part of the student initiative, the power of independent investigation and to develop in him the spirit of research. Although the student is responsible for his undertaking he is encouraged to consult with his department in regard to his work should the need arise. At the close of his study the student presents a thesis covering his investigation. In addition he may be required to appear for an oral or written examination. If by the excellence of his work he satisfies all the requirements of his department and the Honors Committee his name will appear on the commencement program as receiving honors in the field of his specialization.

Phi Kappa Phi Elections. — Those members of the senior class whose scholarship

average has been 85 or above are eligible for election to the Honorary Scholarship Society of Phi Kappa Phi. Not more than 15 per cent of the class can be elected, however.

Scholastic Prizes.

Phi Kappa Phi Award for Scholarship. — Massachusetts Chapter of the Phi Kappa Phi Honorary Scholarship Society offers an award of $50 for outstanding work in scholarship. This is given to some member of the Senior class at the opening of college in the fall. The award is based on the record of the first three years.

The Grinnell Prizes. — Given by the Hon. William Claflin of Boston, in honor of George B. Grinnell, Esq., of New York, for excellence in theoretical and practical agriculture. The contest is open to those senior students whose records on the registrar's books show an average standing of 80 or above for the technical work taken in the Divisions of Agriculture and Horticulture during the junior and senior years. There are three prizes of $25, $15, and $10.

The Burnham Prizes. — These were made possible through the generosity of Mr. T. O. H. P. Burnham of Boston. Prizes of $15 and $10 are awarded to those students delivering the best and second best declamations in the Burnham contest. The preliminary contests are open under certain restrictions to freshmen and sophomores.

The Flint Prizes. — The Flint Oratorical Contest was established in 1881 by a gift of the late Charles L. Flint, a former president of the college. After his death the prizes were continued by college appropriation. Prizes of $30 and $15 are awarded as first and second prizes to those two students delivering the best orations in this contest.

The Hills Botanical Prize. — This is given through the generosity of Henry F. Hills of Amherst, for the first and second best herbaria. Competition is open to members of the senior, junior and sophomore classes. First prize $20, second prize $15.

The Betty Steinbugler Prize in English. — This prize was endowed by John L. Steinbugler, New York City, in honor of his daughter Elizabeth Steinbugler Robertson, a graduate of this College in the Class of 1929. It is awarded annually to a woman in the junior or senior class who has written the best long paper on a subject of literary investigation in a course in English during the year.

ATHLETIC AND ACADEMICS PRIZES.

The Allan Leon Pond Memorial Medal. — This medal is awarded for general excellence in football in memory of Allan Leon Pond of the Class of 1920, who died February 26, 1920. He was a congenial companion, a devoted lover of Alma Mater, a battle-scarred, though youthful, veteran of the Great War, a fine all-round athlete and a true amateur. He would rather win than lose, but he would rather play fair than win. He has been characterized as a typical student of this College.

The Southern Alumni Baseball Cup. — This cup is awarded to that member of the baseball team who contributes most to the success and reputation of the team, both in respect to skill and spirit.

The Thomas E. Minkstein Memorial Award. — This award is made by the Class of 1931 in memory of their classmate who died July 16, 1930, while he was captain-elect of football. The award is given to one of the outstanding men in the Junior Class who has as nearly as possible attained those standards of athletics, scholarship and leadership set by him whose memory this award honors.

The George Henry Richards Memorial Cup. — This cup is awarded annually to the member of the basketball team who shows the greatest improvement in leadership, sportsmanship, and individual and team play during the season. It is in memory of George Henry Richards of the Class of 1921 who died suddenly while a student at the College.

The Joseph Lojko Memorial Plaque. — This plaque is presented to that senior who most fully represents the qualities of Joseph Lojko. He must be a three-letter man, have a satisfactory scholastic record and show those qualities of enthusiasm and cooperation which make for leadership. An award in honor of Joseph Lojko of the Class of 1934, outstanding athlete who died while a senior in the College.

Academics Conspicuous Service Trophy. — This trophy is awarded to that student

who during the past 12 months has made the most important, single contribution to the Academic Activities.

Academics Managers' Prize. — Fifty dollars in gold awarded annually to that Academics manager who fulfills his duties most efficiently.

Poetry Prizes. — Fifteen and ten dollar prizes are awarded to the authors of the best poems published in the *Collegian* during the year.

Interfraternity Leadership Cup.—This cup is awarded annually to the Fraternity which receives the highest average rating in scholarship, Academics, and Athletics for the entire year.

STUDENT ACTIVITIES AND ORGANIZATIONS.

No small part of the value received from four years of college is the training that one acquires through participation in student activities. Student organizations offer excellent opportunities for leadership in a wide variety of fields.

Student Government.

The Senate. — This is a student governing council. It is composed of representatives elected from the Junior and Senior classes. Besides acting as general director of undergraduate conduct it represents the interests of the students and the student body before the Faculty.

Adelphia. — This is a senior honorary society. The members are usually chosen from those who have been prominent in college activities. The society attempts in a quiet, unassuming way to mold student life on the campus.

The Honor Council. — The Honor System prevails at this college. The foreword of the Honor System reads as follows: "We, the students of the Massachusetts State College, believe that the goal of education is character. The man of character deals fairly with himself, and with others, and would rather suffer failure than stoop to fraud. The Honor System stands for this attitude in all relations of the students with the Faculty. In expression of our belief we pledge ourselves to the support of the constitution of the Honor System." Matters pertaining to the Honor System are in direct charge of the Student Honor Council, consisting of members elected from the four classes.

The Women's Student Council. — All appropriate matters pertaining to the conduct of women students are under the control of this council. It is composed of members selected from the senior, junior, and sophomore classes by all the women students.

Academic Activities.

The College Musical Clubs include an orchestra, a band, and a glee club. These make various appearances during the year.

The Dramatic Club, the Roister Doisters, presents annually a revue and two plays, one in the winter, and the other at Commencement. There is a Debating Society which conducts both class and intercollegiate debates for both men and women. All academic activities are supervised by the Academic Activities Board composed of alumni, faculty, and students, and find recognition in semi-annual awards of gold and silver medals.

"The Massachusetts Collegian" is a weekly newspaper, published by the undergraduates of the college.

"The Index" is the college yearbook published by the members of the Junior class.

College Fraternities and Sororities.

There are several national and local fraternities represented on the campus. Rushing rules and general matters dealing with fraternity life are in charge of the Inter-fraternity Conference. This conference awards scholarships, a baseball cup, and a relay plaque to the winners of the Inter-fraternity Contests.

There are several local sororities and an Inter-sorority Conference which deals with affairs of interest to all of the sororities.

Inter-Collegiate Athletics.

The College is represented in inter-collegiate athletics by teams in all the leading sports, including football, baseball, track, hockey, soccer, swimming and basketball.

General policies governing athletics are in charge of the Athletic Board, composed of Alumni, Faculty, and students.

Professional Clubs.

There are several professional clubs established in connection with the various major courses of study. These clubs stimulate the students' professional interest in their chosen subject-matter fields and afford opportunity for discussion of technical subjects of mutual interest.

Religious Organizations.

Five religious organizations are active on the Campus: The Christian Association, the Young Women's Christian Association, the Menorah Club (for Jewish students), the Newman Club (for Catholic students), and the Stockbridge Y (for two-year students). These five organizations unite in forming a Student Religious Council which strives both to further amity among the religious faiths and to promote religious activities and thinking in the student body. These various religious organizations are sponsored by a Faculty Committee on Religious Work and they are under the supervision of the Director of Religious Education. The College conducts a vesper service on each Sunday at five o'clock during the school year at which some of the great religious leaders of our country speak.

The Social Union.

The Social Union was established in 1907. All students become members of the Union in consideration of a small part of the Student Activities Fee. In the fall and winter months the Union gives a series of entertainments.

STANDARDS OF DEPORTMENT.

The customary high standard of college men and women in honor, manliness, self-respect and consideration for the rights of others constitutes the standards of student deportment.

The privileges of the college may be withdrawn from any student at any time, if such action is deemed advisable.

It should be understood that the college, acting through its president or any administrative officer designated by him, distinctly reserves the right, not only to suspend or dismiss students, but also to name conditions under which students may remain in the institution. For example, if a student is not doing creditable work he may not only be disciplined but he may also be required to meet certain prescribed conditions in respect to his studies, even though under the foregoing rules his status as a student be not affected. The same provision applies equally to the matter of absences ("cuts"). According to the rules juniors and seniors are allowed a certain percentage of absences from class and other exercises. This permission, which implies a privilege and not a right, may be withdrawn at any time for any cause.

Similarly, also, it applies to participation in student activities. Though this will ordinarily be governed by the rules as already laid down, yet if, in the judgment of the college authorities, a student is neglecting his work on account of these activities, the privilege of participating in them may be withdrawn for such time as is considered necessary. Moreover, it may be withdrawn as a punishment for misconduct. Prospective students or their parents may, upon application, obtain a copy of the faculty rules governing student relations to the college.

FRESHMAN REGISTRATION.

All members of the incoming freshman class are required to be in residence on the campus for the period of September 21 to September 26, 1936, inclusive. This period is known as Freshman week. During this week will be given the several psychological examinations and tests required of freshmen. In addition physical examinations will be given to the men students. Such matters as pertain to schedule and section assignments will be taken care of at the same time. Lectures on student activities, college customs, and college curriculum will be given also. The object of this week is to introduce the new student into the college, so that only the minimum amount of time will be lost when the actual studies begin.

Admission to Collegiate Courses

A. APPLICATION FOR ADMISSION.

Correspondence concerning admission should be addressed to the Dean's Office.

Every applicant for admission to the college must be at least sixteen years old, and must present to the Dean proper testimonials of character, which, whenever possible, should come from the principal of the school at which the applicant has prepared for college. All applications for admission should be received at the Dean's office on or before June first of the year in which the candidate expects to enroll. Blanks for such application may be obtained by addressing the Dean of the college. All entrance credentials must be in the hands of the Dean before the applicant can matriculate.

B. MODES OF ADMISSION.

Students are admitted to the freshman class either upon certificate or upon examination. No *diploma* from a secondary school will be accepted.

Certificates. — The Massachusetts State College is affiliated with the New England College Entrance Certificate Board. Therefore certificates of admission will be accepted from schools approved by the Board. Certificates of admission will also be accepted from any Massachusetts school listed as class "A" by the State Department of Education, but not included in the approved list of the New England College Entrance Certificate Board. Principals of schools in New England who desire the certificate privilege should address the secretary of the Board, Professor Frank W. Nicolson, Wesleyan University, Middletown, Conn. Certificates from schools outside of New England may be received if those schools are on the approved list of the leading colleges of the section in which the school in question is located.

The credentials of the Board of Regents of the State of New York are accepted as satisfying the entrance requirements of this college when offered subject for subject, provided the grades are satisfactory.

Certificates in order to be accepted must present in the prescribed and restrictive elective groups at least three of the necessary fourteen and one-half units. It is to be understood, however, that responsibility for certification in either elementary French, elementary German, English 1 or English 2, Latin A, Greek A or Algebra, must be assumed by one school, if the candidate has received his preparation in any one subject named above in more than one school. Subjects lacking on certificate must be made up at the time of the examinations for admission. Conditions to the amount of two units will be allowed.

Blank forms for certification — sent to principals or school superintendents only — may be obtained on application to the Dean of the college.

Special Certificate Arrangement for Students from Agricultural Schools. — Superior graduates of Vocational Schools of Agriculture in Massachusetts and Vocational Agricultural Departments in Massachusetts High Schools may be accepted for the Degree of Vocational Agriculture provided: —

(*a*) they are unqualifiedly recommended by the Vocational Division of the Department of Education as *bona fide* Vocational Graduates with superior rank; and

(*b*) that they can present at least 14½ units of certified entrance, approved as to quality and quantity by the State Department of Vocational Education.

Admission by Four Comprehensive Examinations. — By this plan a candidate's qualifications for admission will be based upon the following considerations:

(*a*) School Record: A candidate must present to the Committee on Entrance a complete transcript of his secondary school course giving the subjects and the grades for the four years previous to college entrance, and a confidential estimate of character, personality, and promise of ability to do college work from the school principal. This should be sent to the Dean not later than May 1. The Committee must give its permission before the applicant may take the examinations.

(*b*) The following comprehensive examinations must be taken unless for satisfactory reasons the Committee allows a substitution for 3: —

1. English . . . . . three units.
2. Mathematics, either Mathematics Beta or Mathematics A.
3. A foreign language, selected by the applicant . two units.
4. A fourth subject designated by the applicant and approved by the Committee on Admissions.

These must be the College Entrance Examination Board Plan B examinations given in June. A candidate under this plan will be admitted without condition or refused admission. In the event that a substitution is allowed for foreign language the student must take at least one year of modern language in college without receiving college credit therefor.

C. EXAMINATIONS.

Entrance examinations for admission to the Massachusetts State College will be held at the following centers: —

In June . . . . . Amherst, Stockbridge Hall, room 114.
Cambridge, Massachusetts Institute of Technology, Massachusetts Ave. entrance.
In September . . . . . Amherst, Stockbridge Hall, room 114.

Please note that September examinations are held in Amherst only.

Schedule for Entrance Examinations June 11–13, 1936.

First Day.

8.30 A.M. Algebra.
10.30 A.M. Chemistry.
2.00 P.M. History (ancient, medieval and modern, English, United States and Civics).

Second Day.

8.30 A.M. English 1 and 2.
11.30 A.M. Biology.
2.00 P.M. Plane Geometry.
3.30 P.M. Physics.

Third Day.

8.30 A.M. French, German, Spanish, required and elective.
1.00 P.M. Latin, elementary, intermediate and advanced. Solid geometry and Trigonometry.

Schedule for Entrance Examinations September 16–19, 1936.

First Day.

Second Day.

8.30 A.M. Algebra.
10.30 A.M. Chemistry.
2.00 P.M. History (ancient, medieval and modern, English, United States and Civics).

Third Day.

8.30 A.M. English 1 and 2.
11.30 A.M. Biology.
2.00 P.M. Plane Geometry.
3.30 P.M. Physics.

Fourth Day.

8.30 A.M. French, German, Spanish, required and elective.
1.00 P.M. Latin, elementary, intermediate and advanced. Solid geometry and Trigonometry.

D. REQUIREMENTS FOR ADMISSION.

The requirements for admission are based on the completion of a four-year high school course or its equivalent and are stated in terms of units. A unit is the equivalent for at least four recitations a week for a school year.

Fourteen and one-half units must be offered for admission in accordance with the entrance requirements outlined below. In some instances students are allowed to enter conditioned in not more than two units.

Entrance Requirements.

1. *Prescribed.* — The following units are required: —

Algebra	1½
Plane Geometry	1
English 1 (Grammar and Composition)	2
English 2 (Literature)	1
History	1
A foreign language	2
	8½

2. *Restricted electives.* — From two to six units selected from the following subjects: —

Mathematics and Science.

Solid Geometry	½
Trigonometry	½
Biology	1
*Botany	½ or 1
Chemistry	1
*Geology	½
*Physical Geography	½
Physics	1
*Physiology	½
*Zoölogy	½

History.

Ancient	1
English	1
Medieval and Modern	1
United States and Civics	1

Foreign Languages.

Elementary French	2
Elementary German	2
Elementary Spanish	2
Elementary Latin	2
*Elementary Greek	2
Intermediate French	1
Intermediate German	1
Intermediate Spanish	1
Intermediate Latin	1
*Intermediate Greek	1
Advanced French	1
Advanced German	1
Advanced Spanish	1
Advanced Latin	1

* No examinations given. To be offered for entrance credit on certificate only.

3. *Free margin electives* — not over four units. In case fourteen and one-half units cannot be presented in the prescribed and restricted elective groups, units not to exceed four may be offered as free margin electives. Credit in the free margin will be allowed for any substantial courses (agriculture, general science and fourth year English included) not listed under the prescribed and restricted elective groups for which credit of not less than one-half unit earned in one year is given

toward a secondary school diploma. Since no entrance examinations are given in these subjects they may be offered only on certificate.

E. OTHER INFORMATION ABOUT ENTRANCE.

1. If elementary algebra and plane geometry are counted as three units the total requirement for admission will be fifteen.
2. Both the credits under the prescribed and restricted elective groups must be presented either by certificate from an approved school or by examination or by a combination of both. Credit by certificate will not be accepted unless at least three units are offered.
3. Candidates are allowed to spread their entrance examinations over the three consecutive periods just previous to their entrance into college. A period means June to September of the same year.
4. Examinations for the removal of entrance conditions will be held during the second week of January.
5. All entrance conditions must be satisfied before a student is permitted to enter upon the work of the sophomore year.
6. The privileges of the college may be withdrawn from any student at any time if such action is deemed advisable, regardless of whether entrance was gained by certificate or examination.
7. The passing grade for an entrance examination is 60 per cent.

F. ADMISSION TO ADVANCED STANDING.

A student desiring to transfer to this college from another of recognized standing must present the following credentials: —

1. A letter of honorable dismissal from the institution with which he has been connected.
2. A statement or certificate of his entrance record.
3. A statement from the proper officer showing a complete record of his work while in attendance.
4. A marked catalogue showing the courses pursued.
5. A statement from the proper officer, giving the total number of credits required for graduation by the institution from which the applicant is transferring, and, of this total, the number that the applicant has satisfactorily completed at the time of the transfer.

The above credentials must be sent directly from the Registrar's office of the college from which the student is transferring. They should be addressed to the Dean of the Massachusetts State College. Applications will be judged wholly on their merits. The college may prescribe additional tests before accepting applicants or determining the standing to be granted them.

At least one year's work in residence is required of any student desiring to be recommended for the Bachelor of Science degree.

G. STATEMENT OF PREPARATION REQUIRED FOR ADMISSION.

Agriculture.

Entrance credit in agriculture is granted on the following basis: —

I. The Massachusetts State College accepts a maximum of four units in agriculture (except as described on page 17) from any secondary or county agricultural high school offering work in that subject, provided evidence of such work having been done is submitted on a principal's statement, as is indicated in the "free margin" group.

II. In high schools organizing agricultural club work under the supervision and rules of the junior extension service of the college, one credit is granted for each full year of work performed under the following plan: —

Work of the Winter Term. — (*a*) The study of textbooks such as are suitable for secondary school instruction in agriculture.

(*b*) Course of study: A general outline of suggested topics for study.

(*c*) Visits by a representative of the Massachusetts State College for observation, counsel and advice in regard to kind and amount of work being done in agriculture.

(*d*) Formation of an agricultural club with officers from among its own members,

meeting once a month under local supervision of someone authorized to act for the school authorities.

Work of the Spring Term. — Same in general form as winter term.

Work of Summer Term. — An approved project conforming to the rules of some one or more of the agricultural clubs of the junior extension service of the Massachusetts State College.

Work of the Fall Term. — (*a*) An exhibit of work.

(*b*) Reports and story of achievement submitted to the junior extension service of the college.

Biology.

The entrance examination in biology will cover the work outlined by the College Entrance Examination Board. This work should extend through one full year and include both laboratory and textbook study. The requirements are met by Hunter's *Civic Biology* and similar texts.

Botany.

For one unit of credit in botany, the work outlined in the statement of requirements issued by the College Entrance Examination Board, or its equivalent, will be accepted. This work should occupy one school year and include laboratory and supplementary textbook study. For one-half unit of credit, work that covers the same ground but occupies half the time required for a full unit of credit will be accepted. These requirements are met by such texts as Stevens' *Introduction to Botany* and Bergen & Davis' *Principles of Botany*. A notebook, containing neat, accurate drawings and descriptive records forms part of the requirement for either the half-unit or the one-unit credit. The careful preparation of an herbarium is recommended to all prospective students of this college, although the herbarium is not required.

Chemistry.

The entrance examination in chemistry will cover the work outlined by the College Entrance Examination Board as preparatory for college entrance. In general, this consists of a year of high school chemistry from any standard textbook, with laboratory work on the properties of the common elements and their simpler compounds. No particular work is prescribed. The keeping of a notebook is required.

Students who do not take chemistry in the preparatory school begin the subject in college.

Mathematics.

(*a*) *Required.* — Algebra: The four fundamental operations for rational algebraic expressions; factoring, determination of highest common factor and lowest common multiple by factoring; fractions, including complex fractions; ratio and proportion; linear equations, both numerical and literal, containing one or more unknown quantities; problems depending on linear equations; radicals, including the extraction of the square root of polynomials and numbers; exponents, including the fractional and negative; quadratic equations, both numerical and literal; simple cases of equations with one or more unknown quantities that can be solved by the methods of linear or quadratic equations; problems depending upon quadratic equations; the binomial theorem for positive integral exponents, the formulas for the nth term and the sum of the terms of arithmetic and geometric progressions, with applications.

Plane Geometry: The usual theorems and constructions of good textbooks, including the general properties of plane rectilinear figures; the circle and the measurement of angles; similar polygons; areas; regular polygons and the measurement of the circle; the solution of numerous original exercises, including loci problems; applications to the mensuration of lines and plane surfaces.

(*b*) *Elective.* — Solid Geometry: The usual theorems and constructions of good textbooks, including the relations of planes and lines in space; the properties and measurement of prisms, pyramids, cylinders and cones; the sphere and spherical triangle; the solution of numerous original exercises, including loci problems; applications to the mensuration of surfaces and solids.

Plane Trigonometry: A knowledge of the definitions and relations of trigonometric functions and of circular measurements and angles; proofs of the principal formulas and the application of these formulas to the transformation of the trigonometric functions; solution of trigonometric equations, the theory and use of logarithms, and the solution of right and oblique triangles.

Physics.

To satisfy the entrance requirement in physics, the equivalent of at least one unit of work is required. This work must consist of both classroom work and laboratory practice. The work covered in the classroom should be equal to that outlined in Hall & Bergen's *Textbook of Physics* or Millikan & Gale; the laboratory work should represent at least thirty-five experiments involving careful measurements, with accurate recording of each in laboratory notebook.

Physiology.

Hough & Sedgwick's *The Human Mechanism;* Martin's *The Human Body; Briefer Course.*

Zoology, Physical Geography, Geology.

The following suggestions are made concerning preparation for admission in the subjects named above: —

For physiography, Davis' *Elementary Physical Geography;* Gilbert & Brigham's *Introduction to Physical Geography.* For zoölogy, textbooks entitled *Animals* or *Animal Studies,* by Jordan, Kellog and Heath; Linville & Kelley's *A Textbook in General Zoology.* For geology, A. P. Brigham's *A Textbook of Geology* or Tar's *Elementary Geology.*

Examination in these subjects will be general in recognition of the different methods of conducting courses; but students will be examined on the basis of the most thorough secondary school courses.

History.

The required unit must be offered in either ancient history, medieval and modern history, English history, or United states history and civics. Either one, two or three elective units in any of the historical subjects here named may be offered, provided that no unit be offered in the same subject in which the required unit has been offered.

Preparation in history will be satisfactory if made in accordance with the recommendations of the committee of seven of the American Historical Association, as outlined by the College Entrance Examination Board. The examination will require comparisons and the use of judgment by the candidate rather than the mere use of memory, and it will presuppose the use of good textbooks, collateral reading and practice in written work. Geographical knowledge may be tested by requiring the location of places and movements on outline maps.

To indicate in a general way the character of the textbook work expected, the texts of the following authors are suggested: Botsford, Morey or Myers, in ancient history (to 814 A. D.); Adams, West or Myers, in medieval history; Montgomery, Larned or Cheyney, in English history; Fiske, together with Muzzey and West, in United States history and civics.

English.

The study of English in school has two objectives: first, the ability to use the English language, in both speech and writing, clearly, correctly and effectively; and, second, the ability to read English literature with understanding and appreciation.

(1) *Grammar and Composition* (Two Units). — The first objective makes necessary a rigorous and reiterated instruction in grammar and composition, with special emphasis upon: spelling, sentence structure, punctuation and paragraph development.

(2) *Literature* (One Unit). — The second objective is that of the progressive, four-year course in literature. The student should be trained to read aloud, to memorize significant passages, to associate the books with their historic background and to have well in hand both content and structure. He should be prepared to

answer general questions upon poetry, the essay, prose fiction, the drama and biography by the presentation of varied and definite detail from such standard books as those recommended by the College Entrance Examination Board in its current bulletin. However accurate in subject matter, no paper will be considered satisfactory if seriously defective in punctuation, spelling or other essentials of good usage.

The candidate may effect admission in English: by passing the College Entrance Examination Board's comprehensive examination (3 units), by certification, from an accredited school, in English 1 (2 units) and English 2 (1 unit); or by passing this college's examinations in these subjects in June or in September. Regardless of his method of admission, however, he will be gravely handicapped in his freshman English courses if inadequately prepared in any one of the three phases of study indicated in this statement.

Foreign Languages.

(French, Spanish, German, Latin, Greek.)

Two, three, or four* units of entrance credit in each of the above foreign languages may be presented by certificate or by written examination. Not less than two units (first two years) will be accepted in any one language.

No examination for a third or fourth unit of credit in any language will be given unless the candidate has previously presented by certificate or by written examination the two or three preceding units respectively in that language.

The preparation expected for each of the above units is that stated in the Definition of Requirements of the College Entrance Examination Board.

* A maximum of three units may be offered in Greek.

Collegiate Course of Instruction

The course of study consists of four years of work planned to provide scientific foundation, cultural background, and professional training, and leads to the degree of Bachelor of Science (B.S.). The following five different major lines of specialization are provided: Agriculture; Horticulture; Home Economics; the Physical and Biological Sciences; and the Social Sciences.

FRESHMAN YEAR.

The work of the freshman year consists of definitely required subjects, most of which are identical for all students, in order to insure a uniform preparation in the more fundamental collegiate subjects. However, some differentiation is required in order to properly introduce each student to some major line of work in which he may find his professional interest, and major faculty contacts. This course is presented below in tabular form.

Table of Freshman Subjects.

(Groups A and C of each semester are required of all freshman men, Groups A and D of all freshman women, and one of the options of Group B must be selected by each freshman to complete his year's program of study.)

Group		First Semester	Cr.	Second Semester	Cr.
A		English 1	3	English 2	3
		Mathematics 1†	3	Mathematics 2†	3
		Botany 1* or	4	Botany 1* or	4
		Chemistry 1 or 3*	4	Chemistry 1 or 3*	4
		History 1* or	3	History 1* or	3
		Orientation 1*	3	Orientation 1*	3
B	I	AGRICULTURE divisional electives			
		Animal Husbandry 1	3	Agronomy 2	3
	II	HOME ECONOMICS divisional electives			
		Home Economics 1	3	Home Economics 2	3
	III	HORTICULTURE and LANDSCAPE ARCHITECTURE divisional electives			
		Horticulture 1	3	Agronomy 2	3
	IV	PHYSICAL and BIOLOGICAL SCIENCE divisional electives			
		French 1 or 5 or 7	3	French 2 or 6 or 8	3
		German 1 or 5	3	German 2 or 6	3
	V	SOCIAL SCIENCE divisional electives			
		French 1 or 5 or 7	3	French 2 or 6 or 8	3
		German 1 or 5	3	German 2 or 6	3
C		Military 1	2	Military 2	2
		Physical Education 3	1	Physical Education 4	1
		Physical Education 1	1		
D		Freshman Course 5	1	Freshman Course 6	1
		Physical Education 7	2	Physical Education 8	2
		Physical Education 1	1		

† French or German is optional for Mathematics for students who intend to specialize in Home Economics.

* One semester of each required during freshman year.

SOPHOMORE YEAR.

The work of the sophomore year is also largely prescribed in order to insure as broad a cultural background as possible in preparation for the more specialized training of the last two years. Under the guidance of a major group advisory committee the student begins in this year certain optional choices of electives leading to the special courses of major work which he will later pursue. This course is presented on following page in tabular form.

TABLE OF SOPHOMORE SUBJECTS.

(Groups A and C are required of all sophomore men; Groups A and D of all sophomore women; and two of the electives of Group B must be selected by each sophomore, with the approval of his major group advisory committee.)

Group		First Semester	Cr.	Second Semester	Cr.
A		English 25 and 29	3	English 26 and 30	3
		Economics 25 or	3	Economics 25 or	3
		Psychology 26	3	Psychology 26	3
		Sophomore Science	3	Sophomore Science	3
B	I	AGRICULTURE divisional electives			
		Dairy 25 or Poultry 25	3	Animal Husbandry 26	4
		Bacteriology 31	3	Mathematics 28	3
		Mathematics 27	3	Chemistry 26	4
		Chemistry 25	4	Agricultural Economics 26	3
	II	HOME ECONOMICS divisional electives			
		Home Economics 25	3	Home Ecomonics 30	3
		Drawing 31	3	Home Economics 32	3
	III	HORTICULTURE and LANDSCAPE ARCHITECTURE divisional electives			
		Olericulture 25	3	Pomology 26	3
		Drawing 25	3	Drawing 26	3
		Botany 25	3	Entomology 26	3
		Chemistry 25	4	Floriculture 26	3
		Bacteriology 31	3	Horticulture 26	3
	IV	PHYSICAL and BIOLOGICAL SCIENCE divisional electives			
		Mathematics 27	3	Geology 28	3
		Physics 25	3	Mathematics 28	3
		Chemistry 25	4	Physics 26	3
		Zoology 25	3	Chemistry 26	4
		Botany 25	3	Zoology 26	3
		Chemistry 31	3	Physiology 32	3
				Chemistry 32	3
				Entomology 26	3
				Mathematics 26	3
	V	SOCIAL SCIENCE divisional electives			
		French 7, 29, or 31	3	French 8, 30, or 32	3
		German 25 or 27	3	German 26 or 28	3
		Sociology 27	3	Economics 26	3
		History 25	3	History 32	3
		History 27	3	Economics 28	3
C		Military 25	2	Military 26	2
		Physical Education 23	1	Physical Education 24	1
D		Physical Education 27	2	Physical Education 28	2

JUNIOR AND SENIOR YEARS.

The work of the junior and senior years is, with certain restrictions, elective under the guidance of a special adviser, who is a member of the advisory committee of the major group which the student selects during his freshman year as his field for professional training. The aim of the laxt two years is to give to each student as high a degree of proficiency in some one branch of learning as is possible without sacrificing the breadth of knowledge and training which should characterize a well-rounded college course. In order to insure this result, each student is required to complete, during his last two years of study, certain requirements for specialization within his major group and certain minimum requirements in other groups:

I. Agriculture: Departments of Agricultural Engineering; Agronomy; Animal Husbandry; Dairy Industry; Agricultural Economics and Farm Management; Poultry Husbandry.

II. Home Economics: Department of Home Economics.

III. Horticulture: Departments of Floriculture; Forestry; Landscape Archirecture; Horticultural Manufactures; Olericulture; Pomology.

IV. Physical and Biological Sciences: Departments of Bacteriology and Physiology; Botany; Chemistry; Entomology, Zoölogy, and Geology; Mathematics and Civil Engineering; Physics; Veterinary Science.

V. Social Sciences: Departments of Economics; Education and Psychology; History and Sociology; Languages and Literature.

VI. Physical Education: Department of Student Health; Physical Education for Men; Physical Education for Women.

For purpose of fulfilling the extra group requirements specified below, Groups I to III inclusive are regarded as a unit, since their work is comparable in field and character.

Specific Requirements.

Rule 1. *Credits for Graduation.* — The minimum number of credits for graduation shall be 72 junior-senior credit hours, in addition to the satisfactory completion of the required courses of the freshman year and of the required and elective groups of the sophomore year.

Rule 2. *Credits Each Semester.* — Except upon special permission from the Scholarship Committee, no student shall enroll for more than 20 nor less than 16 credits each semester of his junior and senior years.

Rule 3. *Specialization.* — At the close of his sophomore year each student shall designate some department within his major group in which he desires to specialize, and shall complete, during his junior and senior years, not less than 18 and not more than 36 credits in junior-senior courses offered in that department. In special cases, with the approval of the student's major adviser and the Dean, this requirement may be satisfied by the selection of at least the minimum number of credits from two or more departments of closely related work.

Rule 4. *Requirements in Other Groups.* — Each student shall complete, during his junior and senior years, not less than 12 credits in other than his major group unit.

Rule 5. *Credit in Military Science and Tactics.* — Not to exceed 12 junior-senior credits in Military Science may be included in the minimum requirements for graduation.

Rule 6. *Advisers.* — The work of each student will be under the general supervision of his major group advisory committee from the beginning of his sophomore year, and during his junior and senior years under the immediate supervision of a special adviser who shall be some member of that committee and shall represent the department in which the student is to specialize under the terms of Rule 3. The adviser has full authority to prescribe the student's work required by Rules 3 and 4, and may advise the student with reference to his elections under Rule 7.

Rule 7. *Free Electives.* — Subject to the limitations imposed by Rules 2, 3, 4, and 5, each student may elect during his junior and senior years any courses offered in the catalogue for which he has the necessary prerequisite training.

Rule 8. *Registration.* — No junior or senior shall register until his course of study is approved by his adviser.

A card for recording the election of courses for each semester will be issued from the Schedule Room. This election card, properly filled out and signed, must be returned to the Schedule Room on or before June 1 of each year for first semester courses, and January 4 for second semester courses.

Rule 9. *Changing of Major Group.* — Application for change of major group can be made to the Dean in writing at any time, when approved by both major group advisory committees concerned and by the Dean and the Scholarship Committee, the change becomes operative at the beginning of the term following, provided that no change in the selection of a major group may be made by any student after registration day of his senior year.

Description of Courses

[Heavy-faced Roman numerals indicate the semester in which the course is given. Numbering of courses: 1 to 24, inclusive, freshmen; 25 to 49, inclusive, sophomores; 50 to 74, inclusive, juniors; 75 to 99, inclusive, seniors.]

SPECIAL COURSES FOR FRESHMEN.

1. **I and II.** Orientation Course. — The word orientation may be defined as "the determination of one's bearings or true position in relation to circumstances, ideas, etc." This course attempts to orient the student to the physical and social world in which he lives and works. The first part deals primarily with the nature of our universe and the method of thinking used by man in coming to an understanding of it. An attempt is made to establish a time and space perspective and to form a well defined conception of the cosmos and one's relation to it. A total viewpoint is sought. It is shown that this comes only through a synthesis of the contributions of many subjects, astronomy, geology, chemistry, physics, biology, etc. During the second part of the course the main theme is man in society. The student is made conscious of his own original nature and of the several institutions which serve that nature. The development of these institutions is traced. The student is urged to identify his own activities with them. There is also an introduction to some of the social problems man now faces because of his attempt to understand and control his physical environment and himself. This is really an orientation to the social sciences.

The central thought of the course is human life. The aim is to see life as a whole. Since this is the objective no attempt is made to teach the subject matter of any one science. Rather the course seeks to organize around the individual life the material from many sciences without considering the conventional lines separating one from the other. It suggests how from such an organization a fuller understanding of life may arise and how this may lead to the living of life more knowingly and abundantly. It is hoped that by this orientation the student may see unity in the mass and maze of college subjects and that he may be led to plan his course more intelligently. Theoretically, such an orientation should assist the student in organizing his future information and aid him at the end of his senior year in making the final synthesis of his four years of subject matter in terms of his own life.

3 class hours. Credit, 3.

Assistant Professor Lanphear.

5. **I.** College Adjustments, — For freshman women. A study of the experiences of everyday life in college, to help students recognize various social problems and think in terms of their solution.

1 class hour. Credit, 1.

Miss Skinner.

6. **II.** Vocational Opportunities for Women. — For freshman women. An outline of the occupational progress of women, with special attention to the opportunities for women in those vocations for which the Massachusetts State College gives foundation preparation.

1 class hour. Credit, 1.

Miss Hamlin.

DIVISION OF AGRICULTURE.

Professor Rice.

Agricultural Engineering.

Professor Gunness, Assistant Professor Markuson, Assistant Professor Tague, Mr. Pushee, Mr. Newlon.

The courses in agricultural engineering are planned to give a working knowledge of those phases of engineering which apply directly to the farm. It is expected that the student will acquire a clear understanding of modern farm practice as it relates to permanent improvements of the farm and the farmstead, and in the selection and use of farm equipment.

Elective Courses.

50. **II.** Shop Work. — For juniors; seniors may elect. This course gives instruction in the care and use of carpenters' tools through bench work, repair of farm equipment, and building construction. Practice in building forms, mixing and placing concrete, framing, cutting rafters, etc., make up this portion of the subject. Instruction in forging, pipe fitting, soldering, and the use of machinists' tools for the repair of farm machinery and miscellaneous farm equipment, together with a study of pumps and water supply systems make up the other portion of the work.

3 2-hour laboratory periods, credit, 3.
Mr. Pushee and Mr. Newlon.

51. **I.** House Planning and Construction. — For juniors; seniors may elect. Plan designs of the small house will be made. The arrangement of interior equipment, especially in the kitchen, lighting, heating, water supply, and sewage disposal will be studied, together with a brief history of the house, materials, construction methods, equipment, and architectural styles. Consideration will be given to the economics of house building, including financing and to maintenance and overhead expense.

1 class hour. 2 2-hour laboratory periods, credit, 3.
Assistant Professor Markuson.

52. **II.** Rural Sanitary Equipment. — For juniors; seniors may elect. This course deals with the problems of water supply, sewage disposal, and ventilation which pertain to the farm and small community. Careful studies are made of water systems and sewage disposal plants and their adaptability to various conditions.

1 class hour. 1 2-hour laboratory period, credit, 2.
Assistant Professor Markuson.

60. **II.** Household Equipment. (1936–37). — For juniors and seniors. A study of the selection, operation, care, and efficient arrangement of equipment, with an analysis of the time and energy required in various processes. Given in alternate years.

2 class hours. 1 2-hour laboratory period, credit, 3.
Assistant Professor Tague.

71. **I.** Motors. — For seniors; juniors may elect. The course deals with the gasoline engine as used for stationary work, automobiles, and tractors. The theory of the internal combustion engine is taken up in order to emphasize the effect of design and operation on power and economy. The various types of carburetors, ignition, and lubrication systems are studied in detail. Instruction is given by means of lectures and textbooks, and by operating and repairing stationary engines, automobiles, and tractors. Special attention is given to overhauling and repairing. This course also deals with the application of electricity to farm operations including wiring and electric motors, and refrigeration equipment as used on New England farms.

3 2-hour laboratory periods, credit, 3.
Assistant Professor Tague and Mr. Pushee.

72. **II.** Drainage and Irrigation Engineering. — For seniors; juniors may elect. The course covers the engineering phase of drainage and irrigation. The various systems are studied, and practice is given in the design of drainage and irrigation systems. Field work gives practice in surveying for drains, platting, locating drains, erecting batterboards, and laying tile. Practice is given in assembling equipment for spray irrigation, and the flow of water through nozzles is studied by means of laboratory tests.

1 class hour. 1 2-hour laboratory period, credit, 2.
Assistant Professor Markuson.

74. **II.** Farm Structures. — For seniors; juniors may elect. A study of the strength and durability of concrete, wood, stone, and clay products, and of the mechanical principles underlying their use in farm construction. The design of various farm buildings, such as the general purpose barn, dairy stable, hog house,

sheep barn, milk house, etc. In the drafting room, details of construction will be worked out, a study of the mechanics of simple roof trusses will be made, and a complete design of some major farm building will be finished in all essential details. Blueprints of the finished design will be made.

1 class hour. 2 2-hour laboratory periods, credit, 3.
Assistant Professor Markuson.

80. **II.** Dairy Mechanics (1935–36). — For juniors; seniors may elect. A study of dairy machinery, including steam boilers, engines, pumps, traps, refrigeration machinery, and heat-controlling devices. Practice is given in pipe fitting, packing valves, lacing belts, and similar repair jobs on the equipment used in dairy plants. Given in alternate years.

1 class hour. 1 2-hour laboratory period, credit, 2.
Assistant Professor Tague and Mr. Newlon.

83. **I** and **II.** Agricultural Engineering Problems. — Open only to seniors specializing in the department. This course consists of individual problems chosen by the students under guidance of the department. The work is of an advanced nature, supplementing that of the regular agricultural engineering curriculum. Copy of project outline, indicating the number of credits, must be filed with the department and with the Dean at the opening of the semester.

Credit, 3.
The Department.

85. **I.** Rural Electrification (1936–37). — For seniors; juniors may elect. This course is planned primarily for students who are interested in the application of electricity to agriculture. It includes a study of the generation and distribution of electricity for light and power. Special emphasis is placed on the utilization of electricity on the farm and in rural communities. Given in alternate years.

2 class hours. 1 2-hour laboratory period, credit, 3.
The Department.

Agronomy.

Professor Eisenmenger, Assistant Professor Dickinson, Mr. Thayer, Mr. Isgur.

The courses in agronomy are designed to give instruction concerning the basic knowledge of the soil and its management, fertilizers and their use, and the principal products of the field. An important objective of our undergraduate teaching is to give supporting training to groups specializing in other departments. For undergraduates desiring to specialize in agronomy adequate courses are offered, but for those expecting to go into advanced educational or research work our graduate training is recommended as preferable.

Elective Courses.

2. **II.** Soils. — A general course for freshmen in soils and soil management with especial emphasis on their relationship to crop growth. This course is designed to give the student who does not intend to go further in soil studies, a broad background in soil science and its direct application to practical field problems. The course itself is presented with the object of introducing to the student (a) the physical, (b) the chemical, and (c) the biological properties of the soil and their influence upon the economic production of crops. The laboratory work is designed with the purpose of furnishing direct evidence and a better understanding of the lecture material. Indicators and principles of soil fertility are stressed and part of the time is devoted to fertilizer studies and practices.

2 class hours. 1 2-hour laboratory period, credit, 3.
Mr. Isgur.

51. **I.** Field Crops. — For juniors and seniors. A study of methods and problems of production of field crops important in New England. The successful production of good forage is essential to profitable dairy farming. Special emphasis will be given hay, pasture, and other crops important in dairy farming.

2 class hours. 1 2-hour laboratory period, credit, 3.
Mr. Isgur.

52. **II.** Soil Utilization. — For juniors and seniors. A course intended primarily for those not having had other courses in soils. It deals with the nature and properties of soil types, their adaptation to crops, and special problems arising in the management of extreme soil types.
3 class hours. Credit, 3.
Mr. Isgur.

54. **II.** Turf and Forage Grasses. — For juniors and seniors. Designed to give a practical working knowledge of fine turf and forage grasses. The identification of seeds and plants, their ecology and relative value will be emphasized.
2 class hours. 1 2-hour laboratory period, credit, 3.
Assistant Professor Dickinson.

77. **I.** Crop Improvement. — For seniors. Theory and practice of the improvement of field crops by breeding and selection.
2 class hours. 1 2-hour laboratory period, credit, 3.
Mr. Isgur.

Prerequisite, Agronomy 51.

78. **II.** Fertilizers. — For seniors; juniors may elect. A study of the source, properties, and behavior of commercial fertilizers and soil amendments. Attention will be given to such questions as home-mixed versus commercial fertilizers, the use of concentrated materials, and the economical purchase of fertilizers.
2 class hours. 1 2-hour laboratory period, credit, 3.
Professor Eisenmenger.

82. **II.** Special Problems in Agronomy. — For seniors taking major work in agronomy.
3 2-hour laboratory periods, credit, 3.
Professor Eisenmenger.

Animal Husbandry.

Professor Rice, Assistant Professor Glatfelter, Assistant Professor Parsons, Mr. Foley, Dr. Phillips.

The courses in animal husbandry are designed to give the student a thorough grounding in the scientific, practical, and commercial phases of horse, sheep, swine, beef, and dairy cattle production. The choice of supporting courses is governed by the student's ultimate objective. Upon completion of the four years' course, three general fields are open to the graduate. First, the practical field comprising the actual production of livestock and its products or the management of livestock farms; second, the professional field which embraces college, secondary school, or extension teaching, or federal, state, or commercial research; and third, the commercial field comprising all phases of the meat-packing, milk-production, wool or feed industries, including connections with the large companies, farmers' coopeartive associations, or the operation of local plants.

Elective Courses.

1. **I.** Types and Market Classes of Livestock. — For freshmen. This course is designed to acquaint the student with the broad aspects of the livestock industry in the United States. It begins with a study of markets and market demands for cattle, sheep, swine, and horses, and then considers the selection and operation of the breeding herd. It also serves as a survey course showing the magnitude of the livestock industry and the importance of livestock and their manifold products in a modern, civilized state. Practice in judging and handling all classes of livestock is provided in the laboratory periods.
2 class hours. 1 2-hour laboratory period, credit, 3.
Professor Rice.

26. **II.** Breeds of Livestock and Dairy Cattle Judging. — For sophomores. This course is designed to acquaint the student with the history, development, characteristics, and present status of all the breeds of cattle, horses, sheep, and swine commercially important in the United States. Special attention will be paid to the breeds maintained on the college farm. During April and May trips will be taken on Saturdays to the leading herds of dairy cattle in New England.

The three highest ranking students in advanced judging will represent the college in the intercollegiate Dairy Cattle Judging Contests at the Eastern States Exposition and the National Dairy Show the following fall.

2 class hours. 1 2-hour laboratory period, credit, 3.
Mr. Foley.

51. **I.** The Nutrition of Farm Animals. — For juniors. This course is designed to give the student an understanding of the mechanics of digestion, absorption, circulation, respiration, and excretion; the functions of proteins, carbohydrates, fats, vitamins, and minerals in body metabolism; the functions of those endocrine glands primarily concerned with nutrition; the nature and value of the various feed stuffs; and methods of calculating rations in order to meet the requirements of various classes of livestock.

2 class hours. 1 2-hour laboratory period, credit, 3.
Dr. Phillips.

52. **II.** The Breeding and Improvement of Farm Animals. — For juniors. This course is planned to acquaint the student with the facts of reproductive physiology, with the facts and theories of modern genetics, and to show how such knowledge may be utilized for the creation of more beautiful and more efficient animal types.

2 class hours. 1 2-hour laboratory period, credit, 3.
Professor Rice.

53. **I.** Meat and Meat Products. — For juniors. This course serves as an introduction to the fields of meat packing and farm slaughter. It embraces a study of the magnitude and trends of the meat industry, livestock markets and market grades of livestock, utilization of by-products and opportunities for local New England marketing. Laboratory practice is given in the slaughtering of beef cattle, hogs, sheep, and veal calves, in preparing them into wholesale and retail cuts, and in the curing and smoking of meats.

1 class hour. 2 2-hour laboratory periods, credit, 3.
Mr. Foley.

56. **II.** Beef and Sheep Production and Livestock Judging. — For juniors. This course includes studies of the development of the beef and sheep industries, situation and outlook, phases of production, systems of management, herd and flock improvement, feeding, management, breeding, equipment, and fitting and showing. Practice in judging the various classes of fat stock and horses is given, and during April and May trips are taken to the leading herds and flocks in New England. The five highest ranking students in the judging work represent the college in the Intercollegiate Livestock Judging Contests at the Eastern States Exposition and the International Livestock Exposition the succeeding fall.

2 class hours. 1 4-hour laboratory period, credit, 4.
Dr. Phillips.

73. **I.** Advanced Meat Studies and Judging. — For seniors. This course is designed to impart a knowledge of the fundamental principals involved in judging, buying, and efficiently utilizing meat and meat products. One laboratory per week will be devoted to actual judging in nearby packing plants. The three highest ranking students will be chosen to represent the college at the intercollegiate meat judging contest, International Livestock Show, Chicago, in November.

2 2-hour laboratory periods, credit, 2.
Mr. Foley.

75. **I.** Horse and Swine Production. — For seniors. This course includes a study of the development of the breeds of draft and light horses and swine, and a study of the economic, genetic, nutritional, and managerial problems concerned in producing these classes of livestock with particular reference to New England conditions. Practice is also given in fitting and showing and in livestock judging.

2 class hours. 1 4-hour laboratory period, credit, 4.
Dr. Phillips.

78. **II.** Dairy Cattle and Milk Production. — For seniors. This course embraces all phases of dairy cattle production and management. It affords an opportunity to seek the solution to the economic, nutritional, genetic, and managerial problems concerned in successful dairying. One period a week will be devoted to talks by outside specialists in the various fields. Laboratory work will consist of a detailed study of methods used on the college farm and opportunities to practice and achieve the various skills necessary to the herdsman or showman.

4 2-hour laboratory periods, credit, 4.
Mr. Foley.

81. **I.** Animal Husbandry Seminar. — For seniors. This is essentially a problem course. Each student will select his own problem in the broad field of animal husbandry, report his progress occasionally to the group, and prepare a final paper covering all phases of the problem.

1 2-hour laboratory period, credit, 1.
Professor Rice.

82. **II.** Animal Husbandry Seminar. — For seniors. Students will prepare original papers and talks on various pertinent topics. Round table discussions of animal husbandry investigational work and practices will be conducted.

1 2-hour laboratory period, credit, 1.
Professor Rice.

91. **I.** Genetics and Eugenics. — For juniors and seniors. This course is open to students other than those specializing in animal husbandry, and deals with the general problems concerned in human reproduction and inheritance. The main topics studied will consist of the physiology of reproduction, the physical basis of inheritance, and the mode of transmission of human characteristics. Consideration will also be given to such questions as the causes of variation, the relative importance of genetic and environmental influences, the mechanism of sex determination, as well as population trends, sterilization, and kindred eugenic problems.

3 class hours. Credit, 3.
Professor Rice.

Dairy Industry.

Professor Frandsen, Assistant Professor Mack, Mr. Lindquist.

The courses in dairy industry are offered to meet the needs of students interested in the scientific study of handling market milk, and the making of ice cream, butter, cheese, and other dairy products; agricultural college teaching, and experiment station work; high and secondary school teaching; extension work; research and investigational work.

Elective Courses.

25. **I.** General Dairying. — For sophomores. A general course, introductory to all other courses in dairy industry, and for those who wish to take only one course in dairying to get a general knowledge of the subject. The work covers briefly: a study of milk, its secretion, composition, and various tests applied thereto; methods of pasteurizing and handling milk and cream; the use of separators; elements of ice cream, butter, and cheese making.

2 class hours. 1 2-hour laboratory period, credit, 3.
Professor Frandsen and Mr. Lindquist.

50. **II.** Judging Dairy Products. — For juniors; seniors may elect. A study of market standards and grades of dairy products, with practice in judging milk, ice cream, butter, and cheese. The student learns to recognize quality in dairy products, to detect specific defects, and to know their causes and the means of their prevention. A team is chosen from this class to represent the college in dairy products judging contests at the Eastern States Exposition and the National Dairy Industries Exposition.

1 2-hour laboratory period, credit, 1.
Assistant Professor Mack and Mr. Lindquist.

52. **II.** Market Milk. — For juniors; seniors may elect. A study of the various phases of the market milk industry: sanitary production, transportation, pasteurization and handling in the city plant, marketing, delivery systems, milk and its relation to public health, inspection, milk laws, food value, and advertising. Cultured milk and other milk drinks also are included. Some milk plants are visited, the cost of the trip not exceeding five dollars.
2 class hours. 2 2-hour laboratory periods, credit, 4.
Mr. Lindquist.

75. **I.** Dairy Chemistry (1936–37). — For juniors and seniors. The various physical and chemical properties of milk, milk products, and their components are studied. Testing and control methods commonly used commercially for milk and dairy products are included; moisture and fat determination, casein, salt, and acid tests, work with the Mojonnier apparatus, and other applied chemical tests are taken up in the laboratory. Given in alternate years.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Assistant Professor Mack.

77. **I.** Butter and Cheese Making. — For juniors and seniors. The first half of the semester is devoted to butter making, the remainder to cheese making, condensed and powdered milks. The carious phases of the butter industry studied are: separators and cream separation; pasteurization, neutralization, and ripening of cream; preparation of starter cultures; churning, marketing, and scoring of butter; creamery management. The work in cheese making includes Cheddar, cream Neufchâtel, cottage, processed cheeses, etc. The manufacture of condensed and powdered milk, and commercial casein is also covered.
2 class hours. 2 3-hour laboratory periods, credit, 5.
Assistant Professor Mack and Mr. Lindquist.
Prerequisite, Dairy 25.

78. **II.** Ice-Cream Making. — For juniors and seniors. The course includes a study of the principles and practices of ice-cream making. The effects of such factors as composition, quality, pasteurization, homogenization, aging, and freezing on the finished product are considered. Sherbets, ices, fancy and individual forms, and all flavors of ice cream are studied. Some time is devoted to refrigeration machinery, delivery equipment, and merchandising methods as they are related to the industry.
2 class hours. 2 2-hour laboratory periods, credit, 4.
Assistant Professor Mack.

79. **I.** 80. **II.** Seminar. — For students specializing in dairy industry. The course consists of a study of research done by the experiment stations, also a review of foreign literature. Students prepare papers on timely dairy subjects. Frequent addresses are made to the calss by visiting authorities in dairying.
1 class hour. Credit, 1.
Professor Frandsen.

Agricultural Economics and Farm Management.

Professor Lindsey, Assistant Professor Barrett, Assistant Professor Mighell

The agricultural economics and farm management curriculum is planned to provide a training not only for those proposing to enter actual farm production but also those fields of business closely related to agriculture. With the rapid development of business allied to agriculture there has arisen a demand for agriculturally trained men in many sections of the commercial world. Such lines as marketing of milk and other dairy products, fruit and vegetable distribution, feed and fertilizer manufacturing and marketing, canning and food preservation, agricultural machinery development and utilization, and meat packing and distribution are offering opportunities for graduates trained in agricultural business. The agricultural division of banks, insurance companies, railroads, and similar organizations have openings for agricultural students of statistical and business training. The fields of research, extension, and teaching, in state and federal institutions and secondary schools, provide further openings for graduates of agricultural economics and farm management.

Elective Courses.

26. **II.** Economics of Agricultural Production. — For sophomores. The principles of production economics applied to agriculture, special emphasis being placed upon specialization, combination of the factors of production, and diminishing and increasing inputs and outputs.
3 class hours. Credit, 3.
Assistant Professor Barrett.

56. **II.** The Fundamentals of Cooperation. — For juniors and seniors. A study of the principles of organization, management, and operation of cooperative associations. Special emphasis is placed upon types of organization, methods of formation, financial and operating policies, membership relations, sales methods and policies, and public relations.
3 class hours. Credit, 3.
Professor Lindsey.

71. **I.** Agricultural Economic Theory (1936–37).) For juniors and seniors. The course is a comparative and critical study of the significant contributions of the leading economists to the theory of agricultural economics from the time of Adam Smith to the present. Given in alternate years.
3 class hours. Credit, 3.
Assistant Professor Mighell.

75. **I.** Farm Organization. — For seniors. This course analyzes the functions of the farmer as a business proprietor. Some of the problems and principles considered are: choice and combination of farm enterprises, least cost and highest profit, farm and building layout, the economical use of funds, farm credit, adjustments of production and price cycles as affecting farm organization. Records of the organization of actual farms are studied and analyzed.
3 class hours. Credit, 3.
Assistant Professor Barrett.
Prerequisite, the required freshman and sophomore work in agriculture or horticulture, or the permission of the instructor.

76. **II.** Farm Operation and Advanced Farm Organization. — For seniors. The first part of this course further develops the principle of opportunity costs, and includes the use of farm records and accounts as a basis for planning and budgeting, "scientific management" as applied to efficient farm technique, and the execution of the plans and policies of the organization. The last part of the semester will be given over to a more specific study of the principles and practices outlined in Course 75, with special reference to their application to selected farms. Field trips are required. The approximate expense for travel is five dollars.
1 class hour. 1 4-hour laboratory period, credit, 3.
Assistant Professor Barrett.
Prerequisite, Farm Management, 75.

82. **II.** Advanced Farm Operation. — For seniors majoring in agriculture; others by permission of instructor. A study of the efficiency of operations on a specific farm. An original semester paper will be required.
3 hours or equivalent. Credit, 3.
Assistant Professor Barrett.

89. **I.** 90. **II.** Seminar. — For seniors majoring in agriculture; others by arrangement. Farm management and agricultural economic problems will be considered from the viewpoint of research, extension, and teaching.
1 class hour. Credit, 1.
The Department.

79. **I.** Principles and Methods of Statistics. — For seniors and graduate students; juniors may elect. Methods of collecting, analyzing, interpreting, and presenting statistical information. The application of statistical methods to the fields of agriculture, economics, education, business, and industry is emphasized through practical laboratory problems.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Professor Lindsey.

80. **II.** Advanced Statistics.—For seniors and graduate students. This course deals with the use of statistics in the analysis of economic data with special emphasis upon prices; the use of multiple correlation methods in the study and analysis of prices of agricultural and certain other commodities.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Professor Lindsey.

Poultry Husbandry.

Professor Graham, Professor Sanctuary, Assistant Professor Banta, Mr. Vondell.

The department aims to give instruction in the science, art, and practices of poultry keeping not only to the men majoring in this department, but also to students majoring in other departments and desiring supporting courses in poultry husbandry. Our major courses prepare men for the successful operation of commercial poultry farms and marketing projects either as owners or managers; for graduate work, teaching, extension and investigational work.

Elective Courses.

25. **I.** Poultry Judging. — For sophomores. A study of the origin and evolution of our standard breeds and varieties of domestic fowl; judging production quality, using trapnested birds; judging exhibition quality by score card and comparison. One or more poultry farms, an egg-laying contest, and a poultry show will be visited. Poultry judging teams competing in the intercollegiate contest each January are trained in this course.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Assistant Professor Banta.

51. **I.** Poultry Feeds and Feeding. — For juniors; seniors may elect. A study of the common feeds and the scientific principles underlying the field of nutrition. Recent experimental work and current feeding problems will receive special consideration. For observational practice and accumulation of original data, the management of a group of birds will be required for a period of a few weeks.
3 class hours. 1 2-hour laboratory period, credit, 4.
Assistant Professor Banta.

52. **II.** Incubation and Brooding. — For juniors; seniors may elect. A study of the fundamental principles underlying incubation and brooding practices. The science of physics and general biology is applied to the study of incubation and brooding processes. Students become thoroughly acquainted with modern incubation and brooding equipment through detailed study and operation of typical incubators and brooders. Present-day problems are considered and some are investigated as a part of the class work.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Professor Sanctuary.

54. **II.** Poultry Housing and Sanitation. — For juniors; seniors may elect. A consideration of the biological needs of poultry from the standpoint of housing, and the economic principles governing designing and construction of poultry houses and equipment for poultry farm buildings. The course also embodies a study of the principles of poultry sanitation, including external parasites and the insecticidal agents for their control.
1 class hour. 1 2-hour laboratory period, credit, 2.
Professor Sanctuary.

75. **I.** Market Poultry and Poultry Products. — For seniors. A study of market classes of poultry and eggs; preparation of poultry products for market; requirements of different markets; methods of marketing, involving a study of distribution, finances, and business organizations; cold storage and transportation; advertising, prices, and food values. Laboratory exercises in candling, packing, killing, dressing, and similar operations to make the above named factors more concrete. Students are required to fatten pens of chickens, keeping accurate data of the gains in weight and quality, also the costs of feed and labor, and resultant

profit or loss. When possible, a short trip to Springfield is arranged to study the handling of poultry products in the local market.

1 class hour. 1 2-hour laboratory period, credit, 2.

Mr. VONDELL.

77. **I.** POULTRY BREEDING. — For seniors. Methods of selection and improvement of poultry are developed through the study of the principles of heredity. Most of the course centers around the progeny test and pedigree method of breeding. Students taking this course participate in the college plant selection in pedigree work. Three breeds of poultry, each pedigrees for from seven to twenty years, furnish practice materials. A trip to some college or institution doing experimental work in breeding is required of students taking this course.

2 class hours. 1 2-hour laboratory period, credit, 3.

Professor SANCTUARY.

78. **II.** POULTRY FARM ORGANIZATION. — For seniors. This course embodies the application of economics and business principles to poultry farming. The place and importance of the various branches of well-organized poultry farms and their relation to each other receive special consideration; also the study of surveys and production costs. A trip covering three or more days will be made to representative successful poultry farms. The expense per student is approximately fifteen dollars. This trip is required of each student taking the course for credit.

1 class hour. 1 2-hour laboratory period, credit, 2.

Assistant Professor BANTA.

Prerequisite, Poultry 77.

80. **II.** FARM POULTRY.—For seniors; juniors may elect. For those students who desire a general knowledge of poultry husbandry but who cannot devote more than one term to the subject; it is not intended for students specializing in poultry, and such students are admitted only by special permission. Emphasis is placed on the farm flock and its economic management. Housing, culling, feeding, hatching, rearing, production, marketing, disease control, record keeping and flock management receive special consideration.

2 class hours. 1 2-hour laboratory period, credit, 3.

Assistant Professor BANTA.

81. **I.** 82. **II.** POULTRY PROBLEMS. — For seniors only. This course consists of individual problems chosen by the students under guidance of the department. The work is of an advanced nature, supplementing that of the regular poultry curriculum. Copy of project outline, indicating the number of credits, must be filed with the department and with the Dean at the opening of the semester. Two hours are required in the second semester. Two additional hours may be elected in the first or second semester.

Credit, 1 to 4.

The DEPARTMENT.

DIVISION OF HOME ECONOMICS.

Professor SKINNER.

Home Economics.

Professor SKINNER, Professor MITCHELL, Assistant Professor KNOWLTON, Assistant Professor BRIGGS, Assistant Professor COOLIDGE.

The home economics course offered are planned to meet the needs of (1) those students who are interested in education for homemaking as an integral part of the general education of women; (2) those who are interested in professional or vocational work in which an understanding of home economics is fundamental; (3) those who are interested in preparing for home economics extension service, both junior and adult; (4) those who wish to enter a graduate school leading to professional work. Other departments offer courses planned especially for students in home economics, as follows: House Planning and Construction in the Department of Agricultural Engineering; General Design in the Department of Landscape Gardening; and Food Preservation in the Department of Horticultural Manufactures.

Elective Courses.

1. **I.** Introduction to Home Economics. — For freshmen. A brief study of the share which women have had in social progress, in order that each student may recognize the importance of her relationships to her own family group.
3 class hours. Credit, 3.
Professor Skinner.

2. **II.** Clothing Selection. — For freshmen and sophomores. A study of the principles of clothing selection in order to assist each student to choose satisfactorily line, color, and texture.
2 class hours. 1 2-hour laboratory period, credit, 3.
Assistant Professor Briggs.

25. **I.** Textiles. — For sophomores. A study of fibers, yarns, and fabrics with the aim of developing good judgment in the buying and using of clothing and house furnishing materials.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Assistant Professor Briggs.

30. **II.** Foods. — For freshmen and sophomores. A study including fundamental principles and comparative methods of food preparation with emphasis on the nutritional and economic aspects of foods.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Assistant Professor Knowlton.

32. **II.** Applied Design. — For sophomores. Applications of the principles of design are worked out in specific problems, using various media. Much opportunity is allowed for individual expression. The estimated cost of materials used is five dollars. Students provide all materials subject to the approval of the instructor.
3 2-hour laboratory periods, credit, 3.
Assistant Professor Briggs.
Prerequisite, Drawing 31.

51. **I.** Foods. — For juniors. Advanced food study with especial emphasis on economy in expenditure of money, time, and labor.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Assistant Professor Knowlton.
Prerequisite, Home Economics 30.

52. **II.** Nutrition and Dietetics. — For juniors. A study of food needs of the body under varying conditions of size, activity, age and health, and the value of different foods in contributing to these needs. Special emphasis is placed on the relationship of the nutritive value of food to its cost.
2 class hours. 2 2-hour laboratory periods, credit, 4.
Assistant Professor Knowlton.
Prerequisite, Home Economics 51.

61. **I.** Clothing Selection and Construction. — For juniors. A study of art principles as they apply to clothing design. Principles of construction are given through the use of commercial patterns and flat pattern work in the making of garments. Students provide all materials subject to the approval of the instructor.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Assistant Professor Briggs.

62. **II.** Home Furnishing. — For juniors. A study of the fundamental principles which underlie the successful planning and furnishing of a satisfying home. Many applications of these principles are worked out in practical problems. Class trips will be taken at an estimated expense of two dollars.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Assistant Professor Briggs.

75. **I.** Home Management. — For seniors. A study of personal and family standards of living in the modern home, the economic relations of the household, and

the use of time, energy, and money as a means to influence the home situation.
3 class hours. Credit, 3.
Assistant Professor COOLIDGE.

77. I or II. HOME MANAGEMENT PRACTICE. — For seniors. This course provides an opportunity for a student to assume responsibilities involved in managing a home.
Credit, 4.
Assistant Professor COOLIDGE.

80. II. PROBLEMS OF THE FAMILY. — For seniors. This is a study of the problems of family life in relation to the modern social organization. This course aims to develop an intelligent social consciousness and a sense of individual responsibility in family relationships.
3 class hours. Credit, 3.
Professor SKINNER.

81. I. METHODS OF TEACHING HOME ECONOMICS. — For seniors, by arrangement with the head of the division. A study of educational problems as applied to the teaching of home economics in junior and senior high schools. A few required trips, estimated cost three dollars.
2 class hours. 1 2-hour laboratory period, credit, 3.
Assistant Professor KNOWLTON.

83. I. 84. II. PROBLEMS IN HOME ECONOMICS. — For seniors. An intensive application of home economics to special problems. For students particularly interested in the teaching of home economics, there may be an opportunity for observation and practice teaching under supervision.
2 class hours. 1 2-hour laboratory period, credit, 3.
The DEPARTMENT.

86. II. CHILD DEVELOPMENT (1935–36). — For seniors. A study of the growth and development of the child, the care of children at various ages, treatment in behavior problems, and the influence of environment in shaping personality. Field trips at an estimated cost of two dollars. Given in alternate years.
3 class hours. Credit, 3.
Assistant Professor COOLIDGE.

87. I. ADVANCED CLOTHING PROBLEMS. — For seniors. Costume designing and modeling give opportunity for experimentation in designing. Students provide all materials subject to the approval of the instructor.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Assistant Professor BRIGGS.

89. I. DIET THERAPY. — For seniors. This course offers a brief outline of the causes, symptoms, and general treatment of the various diseases in which the nutritional condition of the patient has significance. The course includes the dietetic treatment and control of gastro intestinal disorders, obesity, cardio-vascular-renal diseases, anemia, fevers, diabetes, food allergy and the deficiency diseases. Field trips are planned to the dietetic departments of nearby hospitals.
3 class hours. Credit, 3.
Professor MITCHELL.

Prerequisite, Home Economics 52; Chemistry 79.

DIVISION OF HORTICULTURE.

Professor VAN METER.

Floriculture.

Professor THAYER, Assistant Professor HUBBARD, Mr. ROSS.

The courses are intended to give the student a general knowledge of the various fields of floriculture, greenhouse design, construction, heating and management, methods of culture and uses of florists' crops (under glass and outdoors), floral decoration and arrangement, and the marketing of plants and flowers. The department aims primarily to train students so that they may take up (1) various phases

of commercial floriculture, (2) positions in nursery establishments, (3) the management of conservatories, (4) private estate work, (5) positions in professional work.

Elective Courses.

26. **II.** Garden Materials. — For sophomores; juniors and seniors may elect. A study of the annuals, biennials, herbaceous perennials, bulbs, bedding plants, and roses that are valuable for use in floricultural or landscape gardening work. Methods of propagation, culture, and uses of the various plants are considered; identification of materials; lectures, assigned readings, and reports.
2 class hours. 1 2-hour laboratory period, credit, 3.
Professor Thayer and Mr. Ross.

51. **I.** Greenhouse Management. — For juniors; seniors may elect. This course is intended to familiarize students with the methods and principles involved in the management of greenhouses and greenhouse crops; history and development of the floricultural industry; preparation of soils; fertilizers; potting; watering; ventilation; control of insects and diseases; methods of plant propagation; forcing of plants. At some time during the semester the members of the class will be required to take a one-day trip to visit large commercial establishments at an approximate expense of five dollars. Lectures, assigned readings, reports, and laboratory practice.
2 class hours. 1 2-hour laboratory period, credit, 3.
Professor Thayer.

52. **II.** Floral Arrangement. — For juniors; seniors may elect. A study of the principles involving the arrangement and use of cut flowers and plants; funeral designs, basket and vase arrangements, table decorations, home, church, and other interior decorations. A study of color and color harmony as applied to such work. Lectures, assigned readings, reports and laboratory practice. This course is limited to ten students, preference being given to major students in Floriculture and Landscape Architecture.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Professor Thayer.

54. **II.** Greenhouse Construction and Heating. — For juniors; seniors may elect. The location, types, arrangement, construction, cost, equipment, heating, and ventilation of greenhouse structures; the drawing of plans and study of specifications. Special emphasis laid on heating problems. Lectures, assigned readings and problems.
2 class hours. 1 2-hour laboratory period, credit, 3.
Professor Thayer.

58. **II.** Amateur Floriculture. — This course is intended primarily for major students in the Division of Home Economics and for other women students. Three phases of floriculture will be considered: (1) the arrangement and use of cut flowers for decorative purposes in the home and elsewhere, (2) house plants, methods of propagation, (3) garden flowers and their uses on the home grounds.
2 class hours. 1 2-hour laboratory period, credit, 3.
Professor Thayer and Mr. Ross.

75. **I.** 76. **II.** Commercial Floriculture. — For seniors. A detailed study of the cultural methods for the important commercial cut-flower crops and potted plants. The marketing of flowers and plants, including the management of wholesale markets and retail stores, a study of systems of record keeping, cost analysis, inventory methods, and other phases of this important part of the floricultural industry. Trips may be taken to nearby commercial establishments. The lectures are supplemented with textbooks, assigned readings and problems.
2 class hours. 1 2-hour laboratory period, credit, 3.
Assistant Professor Hubbard.

Prerequisite, Floriculture 51.

79. **I.** Conservatory Plants (1936–37). — Alternates with Course 81 for students specializing in floriculture. For juniors and seniors. A study of the

foliage and flowering plants used in conservatory work; methods of propagation; assigned readings, reports, and identification of materials.
1 class hour. 1 2-hour laboratory period, credit, 2.
Professor THAYER.

81. **I.** HERBACEOUS GARDENS AND BORDERS. — Alternates with Course 79 for students specializing in floriculture; given annually for students specializing in landscape architecture. For juniors and seniors. This course is a continuation of Course 26 with emphasis on the uses of herbaceous materials in various types of plantings. Lectures, assigned readings, planning of borders and gardens.
1 class hour. 1 4-hour laboratory period, credit, 3.
Assistant Professor HUBBARD.

Prerequisite, Floriculture 26.

82. **II.** SEMINAR. — For seniors specializing in floriculture. Presentation and discussion of research work in floriculture and other related fields, reports on assignments by individual members of the class, and the preparation of a thesis dealing with an assigned subject. Seminars are conducted weekly.
1 class hour. 4 laboratory hours, credit, 3.
Professor THAYER.

Forestry.

Professor HOLDSWORTH, Professor TRIPPENSEE, Assistant Professor RICH, Mr. CURTIS.

The courses in forestry are designed for students who desire a knowledge of the management, regulation and improvement of woodlands of moderate area. They are further intended to develop the place of forest cultivation in land utilization and to be explanatory of the general field of forestry for those who plan to become students in graduate schools of forestry.

Elective Courses.

55. **I.** THE MANAGEMENT, PROTECTION AND USE OF WOODLANDS. — For juniors and seniors. Methods of determining the volume and value of the forest growing stock; the determination of growth and yield; the principles of forest regulation and sustained yield; forest protection; forest development and maintenance. The course is presented with especial emphasis on the application of the principles of forestry to New England conditions. Problems in applied forestry are carried out on the Mount Toby Demonstration Forest. Text and assigned readings.
1 class hour 1 4-hour laboratory and field period, credit, 3.
Professor HOLDSWORTH.

56. **II.** THE PRINCIPLES OF SILVICULTURE AND WOOD PRODUCTION. — For juniors and seniors. The nature of a forest; factors influencing and controlling the growth and development of forest trees and stands; forest effects on site conditions; methods of forest reproduction through silvicultural practice; intermediate cuttings; choice of species for forest use; supplementary seeding and planting; forest sanitation and its relation to silviculture; the products of the forest. The field work in applied forestry is conducted principally on the Mount Toby Demonstration Forest. Visits of inspection are made to certain accessible forests which have been under scientific management for many years.
1 class hour. 1 4-hour laboratory and field period, credit, 3.
Professor HOLDSWORTH.

58. **II.** FOREST ECONOMICS AND POLICY. — For juniors and seniors. The growth and development of forestry from an historic viewpoint; the forest as a natural resource and its place in our economic life; our past and present forest resources; Federal and State forest organization; private forestry; the development of a National Forest Policy. Text, assigned readings. A semester paper, the subject to be selected by the student after conference with the instructor, will be required.
3 class hours. Credit, 3.
Professor HOLDSWORTH.

Horticultural Manufactures.

Professor Chenoweth, Mr. Isham.

The courses in Horticultural Manufactures (Food Technology) have been planned to give the student (1) training in food preservation sufficient to meet the needs of a general education, and (2) training for technical work in the food industries including business, research, and teaching.

Students who desire the elementary training only as given in (1) above will restrict their work to the first year courses and they will not be required to offer prerequisites other than the required general courses in the sciences. Students who desire to make Horticultural Manufactures their major or specialized subject will be expected to take the full two years' work as outlined, and should consult with the department as to required courses in chemistry and bacteriology.

Elective Courses.

51. **I.** Fruit and Vegetable Products. — For juniors; seniors may elect. This course together with Course 52 gives the student a general elementary knowledge of the science and practice of food preservation. Principles and theories of the various methods of food manufacture are the basis for classroom exercises. The laboratory work during the first semester deals largely with the preservation of the autumn fruits and vegetables, small fruit products, freezing, and dehydration.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Professor Chenoweth.

52. **II.** Miscellaneous Products. — For juniors; seniors may elect. This is a continuation of Course 51. The laboratory work includes pickles and pickle products, maple products, citrus products, fruit syrups, soups, condiments, and the canning of meats, poultry, and the spring vegetables.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Professor Chenoweth.

Prerequisite, Horticultural Manufactures 51.

61. **I.** Commercial Practices. — For seniors who specialize in horticultural manufactures. A survey of commercial practices in the manufacture and preservation of food products. This will involve a study of equipment, factory arrangement, sanitation, and government regulations, the operation of types of commercial equipment in quantity production.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Professor Chenoweth.

Prerequisites, Horticultural Manufactures 51 and 52.

62. **II.** Food Preservation Problems. — For seniors who specialize in horticultural manufactures. This is a continuation of Course 61. The class exercises will deal largely with a survey study of the sources of raw materials, commercial methods of manufacture, packing and distribution of the more common foods, also a study of the more important contributions of research. Laboratory work will include the formation of research projects, interpretation of research data. The use of preservatives, the simple analysis of foods and the commercial practices as applied to preservation of such materials as are available: fish, meats, poultry, and spring vegetables.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Professor Chenoweth.

Prerequisite, Horticultural Manufactures 61.

71. **I.** 72. **II.** Seminar. — For seniors who specialize in horticultural manufactures. Two seminar sessions are held each week.
2 class hours. Credit, 2.
The Department.

75. **I.** Food Preservation. — For seniors and graduate students. Not open to students who have credit for Horticultural Manufactures 51, 52, or 81. This is a general course in food preservation and intended only for those who desire a broad general knowledge of the subject because of its cultural or practical value.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Mr. Isham.

81. **I.** Home Food Preservation. — For junior women; seniors and graduate students may elect. This course covers the general field of food preservation as applied to the home. A textbook is used as a basis for classroom exercises. Laboratory work deals with the canning of fruits, vegetables, meats and poultry; the manufacture of food products including jams, jellies, conserves, marmalades, pickles, fruit butters, etc. The emphasis in both class and laboratory is placed on scientific, economical practices for home food preservation.

1 class hour. 2 2-hour laboratory periods, credit, 3.
Mr. Isham.

82. **II.** Special Products. — For seniors and graduate students. The materials offered in this course are as follows: the home manufacture of fruit preserves, candied and glacéd fruits, fruit pastes, confections, candies, and other specialties. Approximately one-half the semester is devoted to elementary work in candy making.

2 2-hour laboratory periods, credit, 2.
Professor Chenoweth and Mr. Isham.

Landscape Architecture.

Professor Waugh, Professor Harrison, Professor Blundell, Mr. Robertson, Mr. Monosmith.

The instruction in this department is aimed at two objectives: first, the contribution to general education; second, the preparation of men for the professional practice of landscape architecture. The former objective seems important from the fact that landscape architecture offers an excellent opportunity for the practical discussion of the principles underlying all the fine arts. In the professional courses students are prepared, as well as time permits, to begin work in landscape architecture which leads through field experience or post-graduate study to permanent establishment in that profession.

Drawing.

Elective Courses.

25. **I.** Free-Hand Drawing. — For sophomores; juniors and seniors may elect. Lettering, free-hand perspective, sketching from models, laying flat and graded washes in water colors, water-color rendering.

2 3-hour laboratory periods, credit, 3.
Mr. Robertson.

26. **II.** Mechanical Drawing. — For sophomores; juniors and seniors may elect. Inking exercises; geometric problems; isometric projection; intersections; shades and shadows; parallel, angular, and oblique perspectives; perspective drawings of buildings. Students should have preparation in plane and solid geometry.

2 3-hour laboratory periods, credit, 3.
Mr. Robertson.

31. **I.** Elementary Design. — For sophomore women. Elementary principles of design, with applications to costume design, interior decoration, etc.

3 2-hour laboratory periods, credit, 3.
Mr. Robertson.

Landscape Architecture.

Elective Courses.

51. **I.** Topography and Mapping. — For juniors. Reconnaissance, location, topography, and mapping, covering the special data needed and the methods used in landscape architecture. Must be followed by Course 52.

3 2-hour laboratory periods, credit, 3.
Professor Harrison.

Prerequisites, Drawing 25 and 26.

52. **II.** Elements of Landscape Architecture. — For juniors. Engineering details; drive design, grade design, drainage, play areas, etc. Study of selected

designs; examination of completed works, and, when possible, those under construction; field notes or written reports.

3 2-hour laboratory periods, credit, 3.
Professor HARRISON.

Prerequisites, Landscape Architecture 51 and either Horticulture 51 or advanced Mathematics.

54. **II.** GARDEN DESIGN. — For juniors. Fundamental principles of design with application to simple problems in the design of gardens and small home grounds.

3 2-hour laboratory periods, credit, 3.
Professor WAUGH.

Prerequisites, Landscape Architecture 51 and 52.

75. **I.** THEORY OF LANDSCAPE ART. — For seniors and graduates. The general theory and application of landscape study, including an examination of the principles underlying all the fine arts with special reference to art appreciation.
3 class hours. Credit, 3.
Professor WAUGH.

76. **II.** CIVIC ART. — For seniors. The principles and applications of modern civic art, including land subdivision, city planning, city improvement, rural improvement, and regional planning.

3 2-hour laboratory periods, credit, 3.

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Prerequisites, Landscape Architecture 51 and 52.

78 **II.** HISTORY OF ART. — For juniors and seniors. An historical appreciative survey of art from earliest times to the present, with special reference to the relations of the fine arts to the problems of daily life.
3 class hours. Credit, 3.
Mr. ROBERTSON.

79. **I.** CONSTRUCTION AND MAINTENANCE (1935–36). — Alternates with Course 83. For juniors and seniors. Detailed instruction in staking out work; methods of construction and planting; organization, reporting, accounting, estimating, etc.
3 class hours. Credit, 3.
Professor HARRISON.

80. **II.** LITERATURE OF LANDSCAPE ARCHITECTURE. — For seniors only. The literature of landscape architecture, gardening, plants, forestry and nature appreciation. Requires extensive readings, oral and written reports, and the preparation of assigned theses and bibliographies.
1 lecture hour, 1 conference period. Credit, 2.
Professor WAUGH.

81. **I.** ADVANCED DESIGN. — For seniors. Grading and planting plans; garden design and planting.

3 2-hour laboratory periods, credit, 3.

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Prerequisites, Landscape Architecture 51, 52, and 54.

82. **II.** ADVANCED DESIGN. — For seniors. A series of problems in the design of estates, parks, and small properties.

3 2-hour laboratory periods, credit, 3.
Professor HARRISON.

Prerequisite, Landscape Architecture 81.

83. **I.** ARCHITECTURE (1936–37). Alternates with Course 79. For juniors and seniors. The history of architectural development, the different historic types, with special reference to the underlying principles of construction and their relation to landscape design. Illustrated lectures, field trips, the study of details, preparation of plates.
3 class hours. Credit, 3.
Professor HARRISON.

84. **II.** Sketching. — For juniors and seniors. The use and development of technique in water color, pencil, pen and ink sketching of outdoor and indoor scenes.
2 class hours. Credit, 2.
Mr. Robertson.

Horticulture.

Elective Courses.

1. **I.** Plant Propagation. — For freshmen. This course serves as an introduction to the field of horticulture, emphasizing the methods and underlying principles involved in the propagation of horticultural plants.
2 class hours. 1 2-hour laboratory period, credit, 3.
Mr. Monosmith.

26. **II.** Plant Materials. — For sophomores. Detailed study of deciduous and evergreen trees, with special reference to the form and character of mature trees, means of identification, natural associations, and uses of the various types of trees in landscape work.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Professor Blundell.

51. **I.** Plant Materials. — For juniors; seniors may elect. Detailed study of shrubs and woody vines, and their identification, with especial emphasis given to their adaptability to the various landscape uses, methods of handling, and care.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Professor Blundell.

Prerequisite, Horticulture 26.

Olericulture.

Professor Van Meter, Assistant Professor Snyder and Mr. Tuttle.

The object of the courses in olericulture is to train men (1) for the commercial branches of vegetable production and marketing, and (2) for the professional fields of research, extension work, and teaching.

Elective Courses.

25. **I.** General Olericulture. — For sophomores; juniors and seniors may elect. A study of the factors affecting plant growth which are essential to a thorough understanding of vegetable plants and their culture, or for vocational teaching, or professional work other than teaching.
2 class hours. 1 2-hour laboratory period, credit, 3.
Assistant Professor Snyder.

51. **I.** Olericulture. — For juniors; seniors may elect. A study of the principles underlying vegetable production; the vegetable plant, soil and its treatment, plant nutrition, seed, and seedage.
2 class hours. 1 2-hour laboratory period, credit, 3.
Assistant Professor Snyder.

52. **II.** Olericulture. — For juniors; seniors may elect. A study of the principles underlying vegetable production; the vegetable plant and its responses to environmental conditions; methods of culture, marketing, storage, and pest control.
2 class hours. 1 2-hour laboratory period, credit, 3.
Assistant Professor Snyder.

75. **I.** Systematic Olericulture. — For seniors. A critical study of variety identification; nomenclature and classification; variety improvement and seed sources; judging and exhibiting.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Assistant Professor Snyder.

76. **II.** Greenhouse Crops and Plant Growing. — For seniors. A study of the culture of vegetable plants under glass: in the greenhouse, plant house, hotbed, and cold frame; the growing of seedling plants both under glass and in the open for local, retail, or wholesale business.
2 class hours. 1 2-hour laboratory period, credit, 3.
Assistant Professor Snyder.

78. **II.** Commercial Olericulture. — For seniors. A study of the problems in the commercial production of vegetables: general culture, fertilizers and manures, machinery, labor, handling, and marketing. One or more trips to important market or truck growing sections are required. Twenty-five dollars will cover the cost of such trips.

2 class hours. 1 2-hour laboratory period, credit, 3.
Assistant Professor Snyder.

Prerequisite, Olericulture 25 or 51 or 52.

Pomology.

Professor Sears, Professor Van Meter, Assistant Professor French, Mr. Roberts.

It is the object of the courses in pomology to give the student a thoroughly practical training, so that he may be able to perform or supervise all of the different operations in connection with the growing and marketing of the various fruits. At the same time he is given a thorough grounding in the scientific principles on which the practical work is based, in order that he may better understand the various practices taught.

Elective Courses.

26. **II.** Small Fruits. — For sophomores; juniors and seniors may elect. A study of the growing of small fruits, including raspberries, blackberries, strawberries, currants, blueberries, and grapes, dealing with such questions as varieties, selecting a site for the plantation, soils, fertilizers, pruning, harvesting, marketing, etc.

2 class hours. 1 2-hour laboratory period, credit, 3.
Professor Sears.

53. **I.** General Pomology. — For juniors; seniors may elect. A study of the most improved practices in fruit production, including such questions as the selection of orchard sites and soils, laying out and setting the orchard, the structure and growth of fruit plants; the bearing habits, pruning and training of fruits; fertilizers, pollination, winter injury, etc.

2 class hours. 1 2-hour laboratory period, credit, 3.
Professor Sears and Mr. Roberts.

56. **II.** Spraying. — For juniors; seniors may elect. (*a*) Spraying materials, their composition, manufacture, and preparation for use; the desirable and objectionable qualities of each material; formulas used, cost, tests of purity. (*b*) Spraying machinery, including all the principal types of pumps, nozzles, hose, and vehicles; their structure and care. (*c*) Orchard methods in the application of the various materials used, with the important considerations for spraying each fruit and for combating each orchard pest. This course is designed especially to familiarize the student with the practical details of actual spraying work in the orchard.

1 class hour. 2 2-hour laboratory periods, credit, 3.
Mr. Roberts.

75. **I.** Systematic Pomology (1936–37). — For juniors and seniors. A study of the more important kinds and varieties of fruits grown in the United States, their relationships and nomenclature. Particular emphasis in placed upon the identification, classification, and value of varieties including a study of the characters of the plant as well as the fruit. Given in alternate years.

1 class hour. 3 2-hour laboratory periods, credit, 4.
Assistant Professor French.

77. **I.** Commercial Pomology (1935–36). — For juniors and seniors. The picking, handling, storing, and marketing of fruits, including a discussion of storage houses, fruit packages, methods of refrigeration, grading, and packing. This course also considers the leading American and foreign centers of fruit production as they affect our own fruit industry through competition here or abroad. Given in alternate years.

2 class hours. 1 2-hour laboratory period, credit, 3.
Mr. Roberts.

81. **I.** 82. **II.** Advanced Pomology. — For seniors. A consideration of the scientific principles governing the growth and behavior of fruit-bearing plants. Special attention is given to a critical survey of the more important research work in the field of pomology.
2 class hours. 1 2-hour laboratory period, credit, 3.
Professor Van Meter.

Prerequisite, Pomology 53.

83. **I.** 84. **II.** Seminar. — For seniors specializing in pomology. Advanced study of problems relating to the business of fruit growing. Each student is assigned a major problem in lines of work in which he is particularly interested. He pursues his studies both by reading and research, and the materials obtained will be worked into theses, which are presented to the seminar for discussion. No lectures are given, but seminar meetings are held for one period each week.
1 class hour. Credit, 1.
The Department.

Plant Breeding.

Elective Courses.

54. **II.** Plant Genetics. — For juniors and seniors. A study of the principles of inheritance as applied to plants, together with a consideration of the methods used and problems involved in the improvement of horticultural crops.
3 class hours. Credit, 3.
Assistant Professor French.

76. **II.** Advanced Plant Breeding. — For seniors. An advanced study of experimental methods, Mendelian analysis, fluctuating variations, mutations, sterility, disease resistance, etc. Laboratory work in the experimental breeding of plants.
2 class hours. 1 2-hour laboratory period, credit, 3.
Assistant Professor French.

Prerequisite, Horticulture 54.

DIVISION OF PHYSICAL AND BIOLOGICAL SCIENCES.

Professor Gordon.

Bacteriology and Physiology.

Professor Gage, Professor Bradley, Miss Garvey, Dr. Rakieten.

The courses in bacteriology and physiology have been planned to furnish: (1) general training in these subjects for all college students, (2) training for those interested in agriculture, industries, and domestic science, (3) training for prospective students of human or veterinary medicine and public health, (4) training for teachers and laboratory workers in the biological sciences. The courses in bacteriology include introductory and general courses, and advanced work, most of which precedes the applied bacteriology of agriculture, the arts, industry, domestic science, and public health. The course in physiology includes considerations of modern ideas on this subject in relation to human welfare.

Bacteriology.

Elective Courses.

31. **I.** Introductory and General Bacteriology. — For sophomores who are not majoring in the physical and biological sciences; juniors and seniors may elect. Designed to make micro-organisms real and significant. The laboratory covers the use and proper care of the compound microscope, the preparation of culture media, methods of sterilizing equipment, the isolation and handling of pure cultures, simple and differential staining, studies on classification and cultural and biochemical studies on type species of pathogenic and nonpathogenic bacteria. Individual practice in the isolation and identification of bacterial forms is a required part of the laboratory assignment. The course aims to provide a basis for bacteriological study and interpretation and to furnish such material as will be valuable in understanding agriculture, domestic science, and public health problems.
2 3-hour laboratory periods, credit, 3.
Professor Bradley and Miss Garvey.

52. **II.** Advanced Bacteriology. — For juniors; seniors may elect. A continuation of Course 31. The identification and differentiation of bacterial species by morphological, cultural, physiological, and serological studies. The combined courses give to the student not only a comprehensive picture of various forms of existing bacteria but develop a specialized technique for their cultivation, isolation, and identification.

2 3-hour laboratory periods, credit, 3.
Professor Bradley and Miss Garvey.

Prerequisite, Bacteriology 31.

61. **I.** Bacteriology. (Public Health.) — For juniors; seniors may elect. Considers the relation of the human body to its environment in the maintenance of health and the production of disease. The administration and organization of community health, the prevention or control of animal or human disease of public health significance are considered. A study of special community health problems and the relationship of these problems to social welfare is discussed.
2 class hours. Credit, 2.
Professor Bradley.

62. **II.** Bacteriology. (Public Health.) — For juniors; seniors may elect. Sanitation and its relation to agriculture, industry, and public health. The microbiological features of air, water, soil, sewage, and refuse; industrial hygiene and the control of municipal and rural sanitary projects are considered.
2 class hours. Credit, 2.
Professor Bradley.

Prerequisite, Bacteriology 31 or 61.

81. **I.** 82. **II.** Applied Bacteriology. — For seniors; juniors may elect. These two courses covering a full year's work are designed to give the student a working knowledge of present-day applied bacteriology. The work in the laboratory is presented in three distinct sections: (1) soil, (2) food, (3) dairy. In soil, such subjects as the number and development of micro-organisms in different soils, factors influencing their growth and activity and changes wrought upon matter in the production of soil fertility, ammonification, nitrification, etc., receive attention. In food, a study of preservation, fermentation, spoilage and methods of sanitary examination are considered. In dairy, emphasis is placed upon modern methods for examining the sanitary quality of milk and milk products. Groups of bacteria normally present, abnormal and normal fermentations, effect of temperature and the rôle of milk in the transmission of disease are some of the subjects receiving special consideration.

2 3-hour laboratory periods, credit, 3.
Professor Bradley or Miss Garvey.

Prerequisite, Bacteriology 52.

85. **I.** Bacteriology. (Serology.) — For seniors. This course aims to supplement Course 52 and is planned to complete work essential for the advanced study in bacteriology and physiological science. This course includes the study, preparation and standardization of such biological products as antigens, agglutinins, precipitins, hemolysins, and complement-fixation bodies, and the use of the same in differential bacteriology and disease diagnoses. Consideration is also given to isohemagglutinins and their relation to human blood groups. Class limited to ten students.

2 3-hour laboratory periods, credit, 3.
Professor Gage and Dr. Rakieten.

Prerequisite, Bacteriology 52.

Physiology.

Elective Courses.

32. **II.** Physiology. — For sophomores. This course presents the subject of physiology from the standpoint of its definition and modern scope. The laboratory demonstrations and practice are planned to meet best the requirements of a preliminary course in physiology. Basic anatomical knowledge essential to physiological interpretations will be considered. Exercises on neuromuscular physiology,

blood, the circulatory system, and alimentation are included. This course is suited to the needs of students who elect only one course in physiology.
2 class hours. 1 2-hour laboratory period, credit, 3.
Professor GAGE and Dr. RAKIETEN.

75. **I.** PHYSIOLOGY. — For seniors; juniors may elect. The object of this course is to establish a broad basis for physiological study. The study and use of instruments is emphasized. The correlation of physics, chemistry, and biological science to the interpretation of functional activities is particularly considered. Aspects of nerve muscle physiology, hemodynamics, alimentation, intermediate metabolism, and the general plan and structure of the body pertaining to each division of the work will be considered.
2 class hours. 1 2-hour laboratory period, credit, 3.
Professor GAGE and Dr. RAKIETEN.

76. **II.** PHYSIOLOGY. — For seniors; juniors may elect. Physiology of internal and external respiration including studies on calorimetry and basal metabolism. This will be followed by work on the physiology of excretions. An introduction to the physiology of the special senses will be presented. This course is especially planned for students with a broad training in biological subjects.
2 class hours. 1 2-hour laboratory period, credit, 3.
Professor GAGE and Dr. RAKIETEN.

Prerequisite, Physiology 75.

Botany.

Professor OSMUN, Associate Professor CLARK, Associate Professor TORREY, Assistant Professor DAVIS, Miss ANDERSON.

The courses in botany are of three types: (1) those which present the principles of plant life both for their fundamental importance in this and other branches and for their general educational value; (2) those which have for their chief aim direct support of technical courses in agriculture and horticulture; (3) those providing broad, intensive training leading to specialization in the science. Courses in the last group also offer helpful training for students specializing in other sciences and in scientific agriculture.

Required Course.

1. **I** and **II.** INTRODUCTORY BOTANY. — for freshmen. Through laboratory, textbook, and lantern slides an attempt is made to set forth a body of facts dealing with the morphology and physiology of plants which may serve not only as a foundation for future professional work in biological science, but may be of intrinsic value to the educated layman. The topics of seed germination, ecological adaptations, floral structures, taxonomy, botanical history, cytology, wood-anatomy, plant physiology and plant reproduction, receive appropriate elementary treatment. The lectures attempt to interpret the facts of plant structure and function in the light of the major biological principles.
2 class hours. 2 2-hour laboratory periods, credit, 4.
Associate Professor TORREY and Miss ANDERSON.

Elective Courses.

25. **I.** CRYPTOGAMIC BOTANY. — For sophomores; juniors and seniors may elect. Selected forms typifying the slime-molds, bacteria, algæ, fungi, lichens, liverworts, mosses and fernworts. The course has a two-fold purpose: (1) it is intended for students who desire to extend their knowledge to the principal branches of the plant kingdom, thus rounding out a general course of which Course 2 constitutes the first part; (2) it is also planned as an introduction to certain advanced courses for which it is prerequisite.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Professor OSMUN.

Prerequisite, Botany 1.

51. **I.** DISEASES OF VEGETABLES. — For juniors and seniors. Study of the principal diseases of vegetables occurring in field and greenhouse, with especial attention to those important in Massachusetts, and consideration of combative

measures. This course is planned and conducted primarily for students interested in vegetable gardening, but those intending to enter any branch of plant industry should find it of interest. Students who desire to extend their knowledge of plant diseases over a wider range of crops may do so by taking, in addition to this, any or all of Courses 52, 53, and 54.

1 class hour. 1 2-hour laboratory period, credit, 2.
Assistant Professor Davis.

Prerequisite, Botany 1.

52. **II.** Diseases of Fruits. — For juniors and seniors. The plan of this course is similar to that of Course 51, but it is intended primarily for students interested in pomology.

1 class hour. 1 2-hour laboratory period, credit, 2.
Assistant Professor Davis.

Prerequisite, Botany 1.

53. **I.** Diseases of Field Crops. — For juniors and seniors. The plan of this course is similar to that of Course 51, but it is intended primarily for students interested in field crops.

1 class hour. 1 2-hour laboratory period, credit, 2.
Assistant Professor Davis.

Prerequisite, Botany 1.

54. **II.** Diseases of Floricultural Crops, Ornamentals, Shrubs, and Trees. — For juniors and seniors. The plan of this course is similar to that of Course 51, but it is intended primarily for students interested in floriculture, nursery practice, and forestry.

1 class hour. 1 2-hour laboratory period, credit, 2.
Assistant Professor Davis.

Prerequisite, Botany 1.

56. **II.** Diseases of Crops. — For juniors and seniors. This is a general course in which representative diseases of the principal crops grown in Massachusetts are studied. The plan of the course is otherwise similar to that of Course 51. It is intended for students majoring in entomology and others who desire a brief, general course of this nature.

1 class hour. 1 2-hour laboratory period, credit, 2.
Assistant Professor Davis.

Prerequisite, Botany 1.

58. **II.** Microtechnique. — For juniors and seniors. A course in the preparation of microscopic mounts including the cellodin and paraffin methods and involving the use or microtomes and of differential stains.

2 2-hour laboratory periods, credit, 2.
Assistant Professor Torrey.

Prerequisite, Botany 25.

59. **I.** 60. **II.** Systematic Botany of the Higher Plants (1936–37).— Alternate with Courses 61 and 62. For juniors and seniors. An intensive study of gymnosperms and angiosperms. Lectures deal with the interrelations of the flowering plants and with their ecology, geography, and economic importance. Laboratory work consists of a study of types from the most important natural plant families. Particular emphasis is laid on the flora of Massachusetts. The department herbarium and greenhouses supply material of important tropical forms for study.

2 class hours. 1 2-hour laboratory period, credit, 3.
Associate Professor Torrey.

Prerequisite, Botany 1.

61. **I.** 62. **II.** The Comparative Anatomy of Green Plants (1935–36.)— Alternate with Courses 59 and 60. For juniors and seniors. In the lectures an intensive study is directed to the comparative anatomy of green plants from the

evolutionary standpoint. Particular emphasis is laid upon the woody forms both living and extinct. Of the latter, the department is fortunate in possessing excellent sets of micro-preparations and lantern slides.

2 class hours. 1 2-hour laboratory period, credit, 3.
Associate Professor TORREY.

Prerequisite, Botany 25.

63. I. 64. II. SYSTEMATIC MYCOLOGY. — For juniors; seniors may elect. Morphology and development of typical species representing the orders and families of fungi; practice in identification, collection and preservation of fungi; systems of classification; collateral reading.

1 class hour. 2 2-hour laboratory period, credit, 3.
Assistant Professor DAVIS.

Prerequisite, Botany 25.

75. I. 76. II. PLANT PATHOLOGY. — For seniors. Comprehensive study of diseases of plants; training in laboratory methods and technique, including culture work and artificial inoculation of hosts; miscellaneous diagnosis; study of literature and representative life histories of pathogens. Prepares for civil service, experiment station, and college work.

1 class hour. 4 2-hour laboratory periods, credit, 5.
Professors OSMUN and DAVIS.

Prerequisite, Botany 25.

77. I. 78. II. PLANT PHYSIOLOGY. — For seniors; juniors may elect. Study of the factors and conditions of (*a*) plant nutrition, including the taking up of water and mineral substances, the assimilation of carbon and nitrogen, and the release of energy due to the processes of dissimilation; (*b*) plant growth, including the influence of internal and external factors on growth, the development of reproductive and vegetative organs; (*c*) plant movements, including those due to the taking up of water, and those of both motile and fixed forms in response to external stimuli. Weekly conferences are held, at which students report on assignments to original sources in the literature.

2 class hours. 3 2-hour laboratory periods, credit, 5.
Associate Professor CLARK.

Prerequisites, Botany 25; Chemistry 51.

80. II. PLANT PHYSIOLOGY. — For seniors; juniors may elect. A briefer course than Course 77 and 78, designed especially for students in horticulture, agronomy, and floriculture, and aiming to give the underlying principles of plant physiology which will supply the scientific basis for the manifold practices in the various fields of plant culture.

2 class hours. 2 2-hour laboratory periods, credit, 4.
Associate Professor CLARK.

Prerequisite, Botany 1; Chemistry 30.

81. I. PLANT ECOLOGY. — For seniors. Study of plants in relation to their environment, with special emphasis on the newer field studies, which have given increasing insight into the physical and chemical factors as they influence growth and development in the field and the adaptability of plants to changes in their normal environment. The various types of plant formations and successions are studied, as well as the mutual and antagonistic relations of certain plants.

1 class hour. 1 2-hour laboratory period, credit, 2.
Associate Professor CLARK.

Prerequisite, Botany 1.

84. II. THE FERNS (1936–37). — For seniors; juniors may elect. Intensive study of the morphology, life-history, and taxonomy of the fern plants, with especial attention to the fern flora of New England. Given in alternate years.

1 class hour. 1 2-hour laboratory period, credit, 2.
Professor OSMUN.

Prerequisite, Botany 25.

Chemistry.

Professor Ritchie, Professor Chamberlain, Professor Peters, Assistant Professor Serex, Assistant Professor Fessenden, Mr. Parrott, Dr. Redmon.

In the courses in chemistry, emphasis is laid on both their educational and their vocational value. The courses in the freshman year deal with fundamental principles and give the student such an understanding of the subject as will enable him to appreciate the relation of chemistry to the other sciences and to agriculture and industry. The more advanced courses, including quantitative analysis, organic, physiological, and physical chemistry, are for those who intend to take up graduate study, to become teachers and workers in the allied sciences, or who desire to follow chemistry as a vocation. Those completing the undergraduate courses are fitted for positions in the agricultural industries — fertilizer, feed, and insecticide manufacture — as well as in other lines of industry, and in the State experiment stations, Federal departments, commercial laboratories, and in high school teaching. Postgraduate students are prepared for positions as teachers in colleges, and for more advanced positions in industry and in the experiment stations.

Required Courses.

1. **I** and **II.** General Chemistry. — For freshmen who have not had chemistry and who begin the subject in college. It presents an introduction to the fundamental chemical laws, together with a study of the typical acid- and base-forming elements and their compounds.
2 class hours. 2 2-hour laboratory periods, credit, 4.
Mr. Parrott and Dr. Redmon.

3. **I** and **II.** General Chemistry. — For freshmen who have had chemistry in high or preparatory school. A study of the fundamental concepts of chemistry. The laboratory work is the central feature of the course, and is supplemented closely by the lectures. The object of the course is to give the student a scientific training as well as to prepare him for advanced courses.
2 class hours. 2 2-hour laboratory periods, credit, 4.
Assistant Professor Fessenden and Dr. Redmon.

Elective Courses.

25. **I.** General Chemistry. — For sophomores. A continuation of Chemistry 1 and 3. A study of ionic equilibrium, oxidation and reduction, the reactions of the ions of some of the common elements and the devising and testing of methods of separating the ions of a few elements.
2 class hours. 2 2-hour laboratory periods, credit, 4.
Assistant Professors Serex and Fessenden.
Prerequisite, Chemistry 1 or 3.

26. **II.** Qualitative Analysis. — For sophomores. A study of the characteristic properties, reactions and the systematic separation and identification of the common cations and anions.
2 class hours. 2 2-hour laboratory periods, credit, 4.
Assistant Professor Serex.
Prerequisite, Chemistry 25.

31. **I.** 32. **II.** Organic Chemistry. — For sophomores; juniors and seniors may elect. This is a short course in organic chemistry primarily for Home Economics and Agricultural majors, and for such General Science majors as are not premedical. The course covers the first part of the subject-matter given in Chemistry 51 and 52, but in a less comprehensive manner, and deals primarily with that part of organic chemistry having to do with food and nutrition and agricultural products. Students taking this course may elect subsequently only Chemistry 79 and 88.
2 class hours. 1 2-hour laboratory period, credit, 3.
Professor Chamberlain.
Prerequisite, Chemistry 1 or 3.

51. **I.** 52. **II.** Organic Chemistry. — For juniors; seniors may elect. A systematic study, both from texts and in the laboratory, of the more important

compounds in the entire field of organic chemistry. Especial attention is given to those compounds which are found in agricultural products or are manufactured from them. These include alcohols, acids, esters, fats, carbohydrates, and proteins. In the second semester compounds in the benzene series are considered. The work forms a foundation for courses in physiological chemistry and agricultural analysis, and is especially planned for those majoring in chemistry or the other sciences.

3 class hours. 2 2-hour laboratory periods, credit, 5.
Professor CHAMBERLAIN.

Prerequisite, Chemistry 25. Chemistry 26 is prerequisite for those majoring in chemistry.

61. I. 62. II. QUANTITATIVE ANALYSIS. — For juniors; seniors may elect. The course includes gravimetric and volumetric analysis. The gravimetric determination of chlorine, sulfur and iron; volumetric analysis with acids and bases; indicators, hydrogen-ion concentration and pH; analysis of limestone; the use of potassium dichromate, permanganate and iodide as reagents; chemical calculations and problems; water analysis.

1 class hour. 2 4-hour laboratory periods, credit, 5.
Professor PETERS.

Prerequisite, Chemistry 25. Chemistry 26 is prerequisite for those majoring in chemistry.

75. I. PHYSICAL CHEMISTRY. — For seniors. A study of the fundamental theories and laws of physical chemistry, together with laboratory work which includes the important methods of physicochemical measurements.

3 class hours. 1 4-hour laboratory period, credit, 5.
Prerequisite, Chemistry 61. Assistant Professor SEREX.

79. I. PHYSIOLOGICAL CHEMISTRY. — For seniors. Supplementary to Courses 51 and 52. For those who expect to take up scientific work in microbiology, botany, agronomy, animal husbandry, etc., and who have had Courses 51 and 52, it gives acquaintance with the chemistry of the physiological processes in plants and animals, by means of which some of the important organic compounds studied in Courses 51 and 52 are built up in the living organism or are used as food by it. In the lectures, the study of food and nutrition as related to both human and domestic animals is the principal subject. In the laboratory, experimental studies are made of both animal and plant materials and processes.

3 class hours. 2 2-hour laboratory periods, credit, 5.
Mr. PARROTT.

Prerequisite, Organic Chemistry.

86. II. REVIEW OF GENERAL CHEMISTRY. — For seniors. Primarily for students majoring in chemistry; others may elect by permission of the instructor. A knowledge of physical chemistry is desirable. The review of general chemistry is largely theoretical. Some subjects may be enlarged by special lectures, such as atomic structure, Werner's co-ordination theory, crystal structure as shown by X-rays.

2 class hours. Credit, 2.
Professor PETERS.

88. II. HISTORY OF CHEMISTRY. — For seniors. An historical and biographical study of chemistry and chemists. The aim of the course is: (1) to give the student a comprehensive view of the science as a whole, through a study of the development of new ideas and the establishment of new theories and laws; and (2) to arouse an enthusiastic interest in the subject and an appreciation of the true spirit of scientific research, through a sympathetic presentation of the work and lives of the great chemists who have been the creators of the chemistry of today. The course will consist of lectures, supplemented by systematic correlated reading and the preparation of reports or essays.

2 class hours. Credit, 2.

92. **II.** Introduction Research. — For seniors specializing in chemistry. The aim of the course is to give the student an opportunity to learn the purpose and methods of research. To each student is assigned some special subject or problem in one of the following fields of chemistry, viz., analytical, biochemical, inorganic, organic, physical. A careful study of the literature goes hand in hand with the working out of the problem in the laboratory.

10 laboratory hours, credit, 5.
The Department.

Entomology, Zoology, and Geology.

Professor Gordon, Professor Alexander, Professor Crampton, Assistant Professor Sweetman, Assistant Professor Warfel, Mr. Shaw, Miss Morse.

Courses in entomology are for two purposes: (1) The introductory courses aim to give the students a general knowledge of insects, particularly in their relations to man, his crops, his domestic animals, and his health. (2) More advanced courses are intended to train students desiring to specialize in entomology to become United States, State, or experiment station entomologists, teachers, foresters, tree wardens, entomologists connected with insecticide-manufacturing companies, consulting entomologists, or to occupy other positions where an expert knowledge of insects is called for. The beekeeping courses are offered with the following aims: (1) To meet the increase in vocational opportunities for the production of bees or honey as a business. (2) To study the beekeeping needs of fruit and truck-crop industries and the part that bees play in the pollination of flowers. (3) To acquaint the student with a recreational field of many phases, which can be made profitable.

The offerings in zoölogy comprise (1) two introductory courses intended primarily for sophomores, and (2) a number of distinct and somewhat special courses of a more advanced nature.

Entomology.

Elective Courses.

26. **II.** General and Field Entomology. — Primarily for sophomores intending to major in one of the biological sciences; other sophomores, juniors, and seniors may elect. For students who desire some knowledge of insects but cannot give more than one semester to the subject; also an introduction to the later courses for those who intend to follow entomology further. Two lectures throughout the semester are devoted to a brief survey of the entire field of entomology; structure and metamorphosis; the more important methods and materials for control of injurious species; a survey of the more conspicuous and important insects with particular attention to the fauna of New England. A laboratory period will be devoted to the preparation and formation of a collection of insects. Until about April 10th, this work will be done indoors and will consist of lectures and practical work preparatory to the field work after that date. Collections made by the students are studied in later courses.

2 class hours. 1 2-hour laboratory period, credit, 3.
Professor Alexander.

51. **I.** Pests of Special Crops. — For juniors and seniors not specializing in entomology. The laboratory work in this course is largely individual. Students specializing in subjects other than entomology, who desire a more complete knowledge of the insects connected with their major lines of work, can obtain it through this course. Work consisting of a critical study of the important economic insect pests leads to an ability to recognize their different stages, and their work, and to a knowledge of the best methods for their control. Work of this nature is available on the insects attacking field crops, market-garden crops, tree fruits, small fruits, shade trees and shrubs, forest trees, flowers, the domestic animals, household articles, and man.

2 2-hour laboratory periods, credit, 2.
Mr. Shaw.

Prerequisite, Entomology 26.

52. **II.** Forest and Shade-tree Insects. — For juniors; seniors may elect. The lecture work deals with the principles and methods of controlling insects

which attack forests and forest products, shade trees, etc. The laboratory periods are devoted to a study of the more important species, their identification, biology, and specific control measures. One entire Saturday for a field excursion is required.
1 class hour. 2 2-hour laboratory or field periods, credit, 3.
Professor ALEXANDER.

Prerequisite, Entomology 26; 55 and 57 desirable.

53. **I.** PESTS OF SPECIAL CROPS. — For juniors specializing in entomology; seniors may elect. Individual laboratory work on the more important insect pests in this country, together with the preparation and presentation of bulletin material on the same.
2 2-hour laboratory periods, credit, 2.
Mr. SHAW.

Prerequisite, Entomology 26.

54. **II.** MEDICAL ENTOMOLOGY. — For juniors. Diseases of man and animals that are transmitted by insects and other arthropods.
2 class hours. Credit, 2.
Professor CRAMPTON.

Prerequisite, Entomology 26.

55. **I.** 56. **II.** CLASSIFICATION OF INSECTS. — For juniors specializing in entomology. Laboratory work on the identification and classification of certain of the major orders of insects.
2 2-hour laboratory periods, credit, 2.
Professor ALEXANDER.

Prerequisite, Entomology 26, accompanying Entomology 57.

57. **I.** INSECT MORPHOLOGY. — For juniors specializing in entomology, and for a limited number of others having the prerequisite. The lectures treat of the external anatomy of insects, particular stress being given to those parts needed in classification, for use in the parallel Course 55. In the laboratory, the external anatomy of the more important groups is studied, with emphasis on those characters used in the determination of insects.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Professor CRAMPTON.

Prerequisite, Entomology 26.

58. **II.** COCCIDOLOGY. — For juniors. A study of the scale insects, their structure, habits; technique of mounting; identification; control.
2 2-hour laboratory periods, credit, 2.
Professor CRAMPTON.

Prerequisites, Entomology 26, 55, and 57.

75. **I.** INTERNAL ANATOMY OF INSECTS. — For seniors. A study of the organology of insects.
1 class hour. 1 2-hour laboratory period, credit, 2.
Professor CRAMPTON.

Prerequisites, Entomology 26 and 57.

76. **II.** ADVANCED ENTOMOLOGY. — For seniors. Two distinct subjects, (1) The immature stages of insects, with particular stress on their structure and recognition; (2) Classification of the minor orders of insects. Taxonomy of all insect groups not earlier considered in Courses 55 and 56.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Professors CRAMPTON and ALEXANDER.

Prerequisites, Entomology 26, 55, 56, and 57.

77. **I.** ADVANCED ENTOMOLOGY. — For seniors. Studies of the life history, habits, and methods of control of the important insect pests of the United States; recognition tests of these pests; a study of the literature; methods of bulletin and thesis preparation.
2 2-hour laboratory periods, credit, 2.
Professor ALEXANDER.

Prerequisites, Entomology 26, 52, 53, 54, 55, 57, and 58.

78. **II.** Insecticides and Their Application. — For seniors; qualified juniors may elect. Composition, preparation, and methods of application of insecticides; other control measures.
2 class hours. Credit, 2.
Assistant Professor Sweetman.
Prerequisites, Entomology 26; Chemistry 51 and 52.

79. **I.** Insect Ecology and Biological Control. — For seniors. The ecological work considers the relation of the insect to its environment, covering such topics as definitions, present status of the subject, factors of the environment, as temperature, moisture and light; biotic potential; environmental resistance; terrestrial and aquatic insect communities; applied ecology. In the second part of the semester, the problem of biological control is begun, this treating of the types of parasitic organisms, insect parasites; predators; and similar matter.
3 class hours. Credit, 3.
Assistant Professor Sweetman.
Prerequisite, Entomology 26.

80. **II.** Biological Control and Insectary Practice. — For seniors. A continuation of Course 79. The work on biological control is concluded, discussing problems such as insect diseases; other organisms as parasites of insects; the natural ecological status of insect parasitism and the economic status of parasites. In the laboratory, the students are assigned individual problems which are conducted on a research basis. These problems may deal with any of the following phases: physiology, insecticides, ecology, biological control, or applied entomology.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Assistant Professor Sweetman.
Prerequisite, Entomology 79.

81. **I.** Insect Physiology. — For seniors. A consideration of the organs of the insect body and their functions, with especial reference to respiration and nutrition; the relationship of physiology to behavior, biochemistry, and biophysics.
2 class hours. Credit, 2.
Assistant Professor Sweetman.
Prerequisite, Entomology 26.

87. **I.** 88. **II.** Special Problems in Entomology. — For seniors and graduate students. Intended especially for qualified seniors and for graduate students desiring to do special work in some branch of entomology.
Credit, 2 or 3.
Prerequisites, Entomology 26, 55, and 57. The Department.

Apiculture.

Elective Courses.

66. **II.** Introductory Beekeeping. — For juniors and seniors. In the classroom a study is made of the evolution of the bee, its anatomy and physiology, the races and types of bees, the history of beekeeping, the organization of the colony, and the life of the individual bee. Work in the laboratory and apiary will include a study of the equipment necessary for beekeeping, pollination and pollen-producing plants, nectar-producing plants, and spring management of colonies. Each student will be given an opportunity to observe and handle bees for himself. During the first half of the semester lectures will be substituted for some of the laboratory periods. To be complete, this course should be followed by Course 85.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Mr. Shaw.

85. **I.** Introductory Beekeeping. — For seniors. A continuation of Course 66. The classroom work consists of lectures and readings in fall management, wintering of colonies, care of the honey crop, the characteristics of honey and wax, and bee diseases. Work in the apiary will include fall management of colonies, wintering, and in the laboratory studies will be made on the physical and chemical characteristics of honey and wax, with some simple biometrical problems.
2 class hours. 1 2-hour laboratory period, credit, 3.
Prerequisite, Entomology 66. Mr. Shaw.

86. **II.** Problems in Apiculture. — For seniors. Studies are made in important problems connected with beekeeping, such as anatomy and physiology; bee behavior; parasites and diseases of bees; queen-rearing; pollination, and biometry. Students taking this course will be encouraged to carry on individual work in their particular problems.

1 class hour. 2 2-hour laboratory periods, credit, 3.
Mr. Shaw.

Prerequisites, Entomology 66 and 85.

Zoology.

Elective Courses.

25. **I.** Elements of Zoology. — For sophomores; juniors and seniors may elect. This course or its equivalent is prerequisite to all other courses in zoölogy or entomology. It consists of an elementary treatment of the principles of animal biology, and provides a measure of preparation for such subsequent studies as assume some acquaintance with the phenomena of animal life.

2 class hours. 1 2-hour laboratory period, credit, 3.
Professors Gordon, Warfel, and Miss Morse.

26. **II.** Forms of Invertebrate Animals. — For sophomores; juniors and seniors may elect. Required for graduation of students who intend to specialize in entomology, except that a student in entomology may substitute for Zoölogy 26 a year's work in Zoölogy 69 and 70. The course is designed to give a substantial introduction to the more important classes of non-vertebrated animals, and is intended for future students of entomology, zoölogy, and general biology. This course is recommended to students who purpose to take the course in historical geology. See description of Courses 69. I, and 70. II, for those who plan to specialize in zoölogy.

1 class hour. 2 2-hour laboratory periods, credit, 3.
Assistant Professor Warfel.

Prerequisite, Zoölogy 25.

50. **II.** Elements of Histology and Microscopic Technique. — For juniors; seniors and graduate students may elect. The course comprises (1) an elementary study of animal tissues, (2) a consideration of the principles and methods involved in microtechnique, (3) a series of practical exercises in preparing animal tissues for microscopic examination.

2 2-hour laboratory periods, credit, 2.
Prerequisite, Zoölogy 25. Miss Morse.

65. **I.** 66. **II.** Comparative Vertebrate Zoology. — For juniors, seniors, and graduate students. The work is arranged to run through the year and deals primarily with features of adult anatomy, with only a minimum of embryology (see Courses 75. I, and 76. II,). A year's work is recommended for those who wish a broad knowledge of comparative vertebrate zoölogy, and is required of those who specialize in zoölogy. Premedical students will find a full year's work in comparative anatomy most helpful, but may elect only one semester, either 65. I, or 66. II, if the requirements for admission to medical school may thus be satisfied. The laboratory work in Course 65. I, is devoted chiefly to the dissection of the dogfish; that in Course 66. II, to mammalian anatomy. A knowledge of vertebrate zoölogy is very helpful in the study of historical geology.

1 class hour. 2 2-hour laboratory periods, credit, 3.
Assistant Professor Warfel.

Prerequisite, Zoölogy 25.

69. **I.** 70. **II.** Comparative Invertebrate Zoology. — For juniors, seniors, and graduate students. These courses offer a broad survey of the field of invertebrate zoölogy. Marine, fresh water, terrestrial, and parasitic forms are included, and fossil as well as living types are considered. For those who specialize in zoölogy either 69. I, or 70. II, is required and adapted for those who have had Zoölogy 26; for those who have not had Zoölogy 26 both 69. I, and 70. II, are required. Students who are not specializing in zoölogy, who have had Zoölogy 26, may elect either Course 69. I, or 70. II; for those who have not had Zoölogy 26 and desire the more

advanced work in invertebrate zoölogy instead of Course 26, both Courses 69. I and 70. II, are required.

1 class hour. 2 2-hour laboratory periods, credit, 3.
Miss Morse.

Prerequisite, Zoölogy 25.

75. **I.** 76. **II.** Vertebrate Embryology. — For seniors and graduate students; juniors may elect. Students are admitted to these courses only upon consultation with the instructor. The work is arranged to run through the year. Students may take Course 75 without continuing with Course 76, but may not elect Course 75 without having had Course 75 or its equivalent. In general practice a student takes the work in embryology along with or subsequent to the study of comparative vertebrate anatomy. Course 75 in the lectures reviews certain general principles of embryology and the early stages of development of Amphioxus and of the fish, frog, bird, and mammal; and in the laboratory is devoted to the study of embryos, in toto and in sections, of the early stages of the frog and the chick. Course 76 in the lectures reviews the later stages of development of the chick and mammal, with comparisons with the frog, and in the laboratory deals with embryos, in toto and in sections, of the later stages of development of organs and organ systems in the chick and mammal.

1 class hour. 2 2-hour laboratory periods, credit, 3.
Professor Gordon.

Prerequisite, Zoölogy 25.

80. **II.** Ornithology. — For juniors; seniors and others may elect. The orders of birds, based on the American Ornithologists' Union Check-List of North American Birds; ordinal characters of birds; families and family characters of Passerine birds; origin and relationships, adaptative radiation, migrations, distribution, and habits of birds. This course is conducted by means of lectures, practical exercises in the museum, assigned reading, and studies in the field.

1 class hour. 2 2-hour laboratory periods, credit, 3.
Professor Gordon.

Prerequisite, Zoölogy 25.

85. **I.** Classes of Arthropods other than Insects. — For seniors; juniors may elect. Arthropods are studied from the phylogenetic standpoint, with especial reference to their relationship to the origin and evolution of insects.

1 class hour. 2 2-hour laboratory periods, credit, 3.
Professor Crampton.

Prerequisite, Zoölogy 25.

90. **II.** Evolution. — For seniors; juniors may elect. In order to demonstrate the universal scope and operation of the laws of evolution, the course includes a brief sketch of the probable origin and evolution of matter as viewed in the light of modern physical and chemical research: the evolution of the solar system, leading to the formation of the earth; the changes in the earth, preparatory to the production of life; the physical and chemical basis of life; the probable steps in the formation of living matter, and the theories concerning it; the evolution of living things; the developmental history of man, and of the races of mankind; the evolution of human intelligence, languages, culture, institutions, etc., and man's probable future in the light of his past development. Especial consideration is given to the factors of evolution, the basic principles of heredity, variation, and similar topics, with particular reference to their application to human welfare; and the recent contributions in the field of entomology to the advancement of our knowledge of these fundamental principles are briefly reviewed.

2 class hours. Credit, 2.
Professor Crampton.

91. **I.** 92. **II.** Special Problems in Zoology. — For seniors and graduate students. Qualified graduate students and seniors who have met departmental requirements for specialization in the field of zoölogy may arrange for work on a special problem in zoölogy.

Credit, 2 or 3.

Prerequisite, Zoölogy 25. The Department.

GEOLOGY.

Elective Courses.

Each of the courses described below is distinct. Course 28 is recommended for those who plan to take only one course in physical geology. It is also desirable as a first course for those who plan to take any of the other courses in geology. Course 52. II, logically precedes the study of petrology, or the science of rocks.

28. **II.** INTRODUCTORY GEOLOGY. — For sophomores; juniors and seniors may elect. This is a general course in physical geology. It deals in an elementary way with the different classes of rocks, and treats more fully of geological agents and processes, and the history of development of land forms.
2 class hours. 1 2-hour laboratory period, credit, 3.
Professor GORDON.

52. **II.** DESCRIPTIVE AND DETERMINATIVE MINERALOGY. — For juniors; seniors and graduate students may elect. This course deals with many of the common or useful minerals and involves the consideration of their composition, crystal forms, occurrence, and economic uses, if any. The laboratory work consists of the study of the physical properties or characters of various minerals as a means of sight recognition, and simple tests, including the blowpipe, for their determination.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Professor GORDON.

61. **I.** ELEMENTS OF PETROLOGY. — For seniors; juniors and graduate students may elect. The various rock-forming minerals are first reviewed. Then follows a discussion of the different kinds of igneous, sedimentary, and metamorphic rocks, with consideration of their petrographic distinctions, modes of occurrence, and structural features.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Professor GORDON.

62. **II.** HISTORICAL GEOLOGY. — For seniors; juniors and graduate students may elect. In this course the principal events in the physical history of North America are reviewed in chronological sequence, with a survey of the plant and animal life of the past.
3 class hours. Credit, 3.
Professor GORDON.

Mathematics and Civil Engineering.

Professor MACHMER, Associate Professor MOORE, Assistant Professor MILLER, Mr. BOUTELLE, Mr. MARSTON.

The work of the freshman year is required. It is intended to furnish the necessary drill and groundwork needed for many of the scientific and practical courses of other departments. Thoroughness and accuracy are insisted upon. The advanced work in mathematics is taught from a practical standpoint, and many of its applications to other subjects are given. The courses in surveying and civil engineering are given to furnish the groundwork for a professional career. Special emphasis is given to the subjects bearing on highway construction and maintenance.

Required Courses.

1. **I.** ALGEBRA. — For freshmen. A brief review of radicals, quadratic equations, ratio and proportion, variation, and progressions; graphs, binomial theorem, determinants, permutations and combinations, probability, logarithms, compound interest and annuities, and theory of equations. The use of the slide rule is taken up in connection with logarithms.
Credit, 3.

Professors MACHMER, MOORE, MILLER, Mr. BOUTELLE, Mr. MARSTON.

2. **II.** PLANE TRIGONOMETRY AND MATHEMATICAL ANALYSIS. — For freshmen. The trigonometric functions as lines and ratios, proofs of the principal formulas, transformations, inverse functions, applications to the solution of right and oblique triangles, practical applications, trigonometric equations. This is followed by a

brief study of some of the different modes of variation, finding the exact or approximate relations (equations) between the varying quantities, particularly as illustrated by the use of the graph. Also a review of methods of computation, with special emphasis on short processes and the making of close approximations.
3 class hours. Credit, 3.

Professors MACHMER, MOORE, MILLER, Mr. BOUTELLE, Mr. MARSTON.

Elective Courses.

26. **II.** PLANE SURVEYING. — For sophomores; juniors and seniors may elect. The elements of land surveying, including the adjustment and use of the usual instruments. Textbooks, lectures, and field work.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Associate Professor MOORE.

27. **I.** ANALYTIC GEOMETRY. — For sophomores; juniors and seniors may elect. A discussion of the line, circle, conic sections, and various higher plane curves.
3 class hours. Credit, 3.
Professors MACHMER, MOORE, MILLER, Mr. BOUTELLE, and Mr. MARSTON.

28. **II.** DIFFERENTIAL CALCULUS. — For sophomores and juniors; seniors may elect. The basic ideas and methods of the differential calculus. The course aims to give the student a realization of the power of the calculus as an instrument of analysis.
3 class hours. Credit, 3.
Associate Professor MOORE, Assistant Professor MILLER, and Mr. BOUTELLE.
Prerequisite, Mathematics 27.

51. **I.** INTEGRAL CALCULUS. — For juniors; seniors may elect. A continuation of Mathematics 28 into the field of the integral calculus, with special emphasis on applications to problems.
3 class hours. Credit, 3.
Associate Professor MOORE, and Assistant Professor MILLER
Prerequisite, Mathematics 28.

53. **I.** APPLIED MECHANICS. — For juniors and seniors. The following topics are considered in the study of statics and kinetics; colinear, concurrent, nonconcurrent and parallel force systems in a plane and in space; static friction problems; first and second moments; rectilinear and curvilinear motions. The free-body method of analysis is emphasized. Algebraic and graphical solutions are determined.
3 class hours. Credit, 3.
Mr. MARSTON.

Prerequisites, Physics 25; Mathematics 28.

54. **II.** HIGHWAYS. — For juniors and seniors. A discussion of the problems arising in modern highway work including development, surveys and plans, drainage and erosion, design, road surfaces, construction and maintenance, and economics. Textbook, lectures, and field problems.
2 class hours. 1 2-hour laboratory period, credit, 3.
Mr. MARSTON.

Prerequisite, Mathematics 26 or permission of the instructor.

56. **II.** STRENGTH OF MATERIALS. — For juniors and seniors. The following topics are considered: elementary stresses and strains; combined stresses; riveted joints; torsion; shear and bending moments; stresses and deflections in beams; statically indeterminate beams; columns; reinforced concrete beams. The physical properties of materials of construction will be discussed during the class period.
3 class hours. Credit, 3.
Mr. MARSTON.

Prerequisite, Mathematics 53.

60. **II.** Spherical Trigonometry. — For juniors and seniors. A study of the trigonometry of the sphere with applications to astronomy and navigation.
1 class hour. Credit, 1.
Associate Professor Moore.

Prerequisite, Mathematics 51.

75. **I.** Hydraulics. — For juniors and seniors. Hydrostatics, which deals with pressure gages, pressures on surfaces and immersed and floating bodies, is first considered. Hydrokinectics, which includes flow through orifices and tubes, over weirs and dams, through pipes and open channels, is dealt with next. Hydrodynamics, which considers turbines and pumps, will be taken up briefly. Where possible, current practical problems in hydraulics, such as flood control, hydroelectric power development, and erosion control are discussed during the class period.
3 class hours. Credit, 3.
Prerequisites, Physics 25; Mathematics 28. Mr. Marston.

76. **II.** Water Supply. — For juniors and seniors. This course considers the engineering aspects of public water supply systems and includes the following topics: quantity of water required; sources of supply; rainfall; evaporation and percolation; flow of streams; ground water; quality of water supplies; water-works construction; intake works; dams; methods of purification; distribution systems.
3 class hours. Credit, 3.
Mr. Marston.

Prerequisite, Mathematics 75 or permission of the instructor.

91 **I.** 92. **II.** Differential and Empirical Equations. — For seniors, A course dealing with the methods of solution of the simpler forms of differential equations and their applications, and the determination of empirical equations from observed data. Textbook and lectures.
2 class hours. Credit, 2.
Associate Professor Moore.

Prerequisite, Mathematics 51.

Astronomy and Meteorology.

Elective Course.

58. **II.** Descriptive Astronomy and Meteorology. — For juniors and seniors. A brief non-mathematical descriptive course which presents a general survey of the elementary facts and principles of astronomy and meteorology. The chief objective is to make the student alive to the beauty and the order that is revealed in the sky. The course deals with a consideration of the atmosphere through which astronomical phenomena are observed; fundamental conceptions of the celestial sphere, the solar system, stars, constellations, and nebulæ. Two hours of observation and discussion may be substituted for any lecture period.
2 class hours. Credit, 2.
Assistant Professor Lanphear.

Physics.

Professor Powers, Assistant Professor Alderman, Dr. Ross.

The courses in this department present a basic study of the physical laws and phenomena of nature with special emphasis on the applications of the principles studied. These courses furnish satisfactory training for pre-medical students and for prospective teachers in secondary schools. Courses 25 and 26 constitute a study in general physics. The other courses afford opportunity for more advanced and individual work.

Elective Courses.

25. **I.** Mechanics and Heat. — For sophomores; juniors and seniors may elect. This course is largely a study of the following and related topics: equilibrium of bodies; forms of energy and work; motion; fluids; surface tension; molecular phenomena; elasticity; wave-motion; thermometry; expansion; hygrometry; transmission of heat; changes of state; radiation.
2 class hours. 1 2-hour laboratory period, credit, 3.
The Department.

26. **II.** Light and Electricity. — For sophomores; juniors and seniors may elect. Includes wave-theory of light; optical instruments; analysis of light; interference; polarization; magnetism; electrostatics; production and properties of electric currents; electrical appliances and machines; oscillatory circuits; vacuum tubes, and related topics.
2 class hours. 1 2-hour laboratory period, credit, 3.
The Department.

Prerequisite, Physics 25.

51. **I.** 52. **II.** Magnetism, Electricity, Photo-electricity, Thermionics, and Applications. — For juniors and seniors. Course 51 deals largely with direct currents, Course 52 with alternating currents, applications of thermionics, and photo-electricity. These courses are planned to give the student a good training in theory and methods of measurement in the subjects indicated, which are useful in many fields of investigation. Modern methods are stressed and instruments of precision are used.
2 class hours. 1 2-hour laboratory period, credit, 3.
Professor Powers.

Prerequisites, Physics 26 and Mathematics 28 for Course 51; Physics 51 for Course 52.

53. **I.** Optics. — For juniors; seniors may elect. An intermediate course in the theory of light. Work in geometrical and physical optics is done. Precision instruments are used in the laboratory.
2 class hours. 1 2-hour laboratory period, credit, 3.
Assistant Professor Alderman.

Prerequisite, Physics 26; Mathematics 28.

54. **II.** Thermodynamics. — For juniors; seniors may elect. A study of heat exchanges and energy changes due to heat in systems of matter. The subject material and experimental methods are useful in other branches of science.
2 class hours. 1 2-hour laboratory period, credit, 3.
Assistant Professor Alderman.

Prerequisite, Physics 25; Mathematics 28.

75. **I.** 76. **II.** Advanced Experimental Work in Selected Topics. — For seniors. These courses are largely experimental, and the subject matter is adapted to the needs of the individual student. The research viewpoint is emphasized.
3 2-hour laboratory periods, credit, 3.
Professor Powers.

Prerequisites, Physics 25, 26; 51 and 52; or 53 and 54; Mathematics 28 and 51.

85. **I.** 86. **II.** Modern Physics. — For seniors. Typical subjects studied are theories of the atom, radiation, quantum theory, spectra, X-ray analysis, etc.
3 class hours. Credit, 3.
Professor Powers.

Prerequisites, Physics 25, 26, 51, 53, 54, or equivalent; Mathematics 28 and 51.

Veterinary Science.

Professor Lentz.

The courses in veterinary science are arranged to meet the needs of students who expect to follow practical agriculture; of prospective students of veterinary and human medicine, and of teachers and workers in the biological sciences.

Elective Courses.

51. **I.** Veterinary Hygiene. — For juniors; seniors may elect. Students are acquainted with the influences which air, water, feed, disposal of animal waste material, etc., may have upon the health of animals, and upon the health of those who use both animals and animal products.
3 class hours. Credit, 3.
Professor Lentz.

75. **I.** Comparative Veterinary Anatomy. — For seniors; juniors may elect. The structure of the horse is studied and the structures of other farm animals are compared with it. This is a lecture and demonstrational course.
3 class hours. Credit, 3.
Professor Lentz.

76. **II.** General Veterinary Pathology. — For seniors; juniors may elect. A study of fundamental, general pathological conditions; inflammation, fever, etc., and application of principles to etiology, pathogenesis, and prophylaxis of communicable and non-communicable diseases of domesticated animals.
3 class hours. Credit, 3.
Professor Lentz.

88. **II.** Avian Pathology. — For seniors. Consists of lectures devoted to principles of pathology, with specific application to avian diseases. Etiology, pathogenesis, and prophylaxis will be emphasized.
3 class hours. Credit, 3.
Professor Lentz.

Prerequisites, Bacteriology 31 and 52; Physiology 75 and 76.

DIVISION OF SOCIAL SCIENCES.

Professor Mackimmie.

Economics.

Professor Cance, Professor Lindsey, Assistant Professor Gamble, Mr. Smart, Dr. Larcom.

The aims of the department are two: (1) to give the student an understanding of economic theory and of the application of economics to the organization of Society; (2) to provide students with the elementary training necessary for business vocations.

Required Course.

25. **I** and **II.** Elements of Economics. — For sophomores. Definitions and introductory principles of production, exchange, and the financial organization of society, with a short survey of the economics of distribution and the use of wealth and income.
3 class hours. Credit, 3.
The Department.

Elective Courses.

26. **II.** Elements of Distribution. — For sophomores. A continuation of Course 25 with emphasis on the economics of wages, rent, interest, ownership, and profits. In general, a more detailed study of the theory of wealth distribution and the social forces concerned with valuation and the apportionment of wealth and income arising from economic activity.
3 class hours. Credit, 3.
Dr. Larcom.

Prerequisite, Economics 25.

28. **II.** Economic Geography. — For sophomores. The purpose of this course is to present to the student, the geographic distribution of natural and human resources, the physiographic bases of the agricultural, manufacturing, and allied industries, their economic characteristics, and the physical and social reasons for their geographic location.
3 class hours. Credit, 3.
Assistant Professor Gamble.

51. **I.** Organization of Business and Industry. — For juniors; seniors may elect. A presentation of the industrial relationships and the principles upon which the production of economic goods is based. The forms, organization, and administration of business. Problems of labor and wages; working relations between employer and employed; economic security. Some study will be made of the corporation, its effectiveness, and it social influences.
3 class hours. Credit, 3.
Professor Cance and Assistant Professor Gamble.

52. **II.** Money, Banking, and Credit. — For juniors; seniors and graduate students may elect. The development of the monetary and banking systems of the United States; the operation of various types of financial institutions; the use of credit in economic production and the development, organization, and operation of agricultural and industrial credit institutions.
3 class hours. Credit, 3.
Assistant Professor Gamble.

53. **I.** Marketing and Marketing Problems. — For juniors; seniors and graduate students may elect. A study of the forces and conditions which determine prices and the mechanism, methods, and problems concerned with transporting, storing, and distributing economic goods. Supply and demand, determination and course of prices, terminal facilities, the middleman system, speculation, protective legislation, the retail market, and direct sales are considered. The characteristics and possibilities of the New England market are given special attention. Lectures, readings, assigned studies, and field work. Class trip to Boston or Springfield for market inspection, at an estimated expense of five to ten dollars.
3 class hours. Credit, 3.
Professor Cance.

54. **II.** Corporation Finance (1936–37). Alternates with Course 78. — For juniors and seniors. Types of business organization and their essential features; the nature and growth of the corporation and its economic and social significance; types of securities used for raising capital; promotion; financial structure of various types of concerns; administration of income; control; holding company finance; corporate failure and reorganization are considered.
3 class hours. Credit, 3.
Assistant Professor Gamble.

55. **I.** Economics of Consumption. — For juniors; seniors and graduate students may elect. The purpose of this course is a consideration of the importance of consumption in modern industry and commerce. It includes a study of the laws of consumption, standards of living, sources and factors determining family incomes, and of the administration of these incomes as shown by the expenditures of the nation and of various groups. The relation of consumption to the problems of population and to the development of society is also studied. Lectures, assigned readings, and class discussions.
3 class hours. Credit, 3.
Dr. Larcom.

56. **II.** Advertising and Salesmanship. — For juniors; seniors may elect. This course is a practical study of the technique of present-day market distribution of agricultural and other products. Emphasis is placed on the functions of advertising, and upon the steps involved in the preparation of the finished advertisement. The principles and problems of selling goods and services are analyzed and discussed and the assistance of advertising to the salesman is stressed.
3 class hours. Credit, 3.
Dr. Larcom.

58. **II.** Business Law. — For juniors; seniors may elect. This course consists of a particular study, drawing, reading, and interpretation of contracts and sales; with specific problem work. Fundamentally, it is a course in logical reasoning using legal principles as its basic material. Wills, commercial paper, carriers, real estate agency, public and personal rights presented by lecture during the course.
3 class hours. Credit, 3.
Mr. Smart.

75. **I.** Current Economic Problems. — For seniors and graduate students; juniors may elect. An advanced course for those desirous of studying more intensively some current economic problems. Studies in economic philosophy and the economic aspects and consequences of progress in the physical and biological sciences, current economic questions, agricultural legislation, and government aids and subsidies are some of the problems discussed. Particular attention will

be given to economic problems relating to New England. Students will be encouraged to pursue lines of individual interest.
3 class hours. Credit, 3.
Professor CANCE.

76. **II.** PRINCIPLES OF TRANSPORTATION. — For seniors and graduate students; juniors may elect. The development of highway, waterway, and railway transportation, and its relation to the agricultural and industrial development of the country; the principles governing the operation and control of transportation agencies; present-day problems relating to the shipment of farm and industrial products, rates, facilities, and services; methods of reducing wastes in transportation; the economics of the good roads movement and of motor transportation. Lectures, text, and field work.
3 class hours. Credit, 3.
Professor CANCE.

77. **I.** ECONOMICS OF FOREIGN TRADE (1937–38). Alternates with Course 79.— For seniors; juniors and graduate students may elect. A study of the principles and practices of international trade, including a survey of historical trends of the foreign trade of the United States; the business methods of foreign traders; foreign exchange; and the efforts made by governments and business groups to influence foreign trade. Textbook, lectures, class discussions, and class trip to Boston at an estimated expense of twelve to fifteen dollars.
3 class hours. Credit, 3.
Assistant Professor GAMBLE.

78. **II.** PUBLIC FINANCE (1935–36). Alternates with Course 54. — For juniors and seniors. Principles of public revenues and expenditures with special emphasis on the systems and problems of taxation.
3 class hours. Credit, 3.
Assistant Professor GAMBLE.

79. **I.** LABOR PROBLEMS (1936–37). Alternates with Course 77. — For seniors. An analysis of the background and character of the modern labor problem with special reference to the United States. Topics to be considered include the problems of wages, hours, working conditions and unemployment; the trade union movement; and some agencies for the promotion of industrial peace. Attention will be given to the effects of the National Recovery Act upon the position and the problems of labor.
3 class hours. Credit, 3.
Dr. LARCOM.

81. **I.** ELEMENTARY BUSINESS ACCOUNTING. — For seniors; juniors may elect. This course aims to give the student an elementary working knowledge of the principles underlying the accounting system in the gathering, analysis, and interpretation of accounting data, and the methods used in accounting and preparing the usual types of business statements for individual proprietorship businesses and partnerships. The managerial uses of accounting as a means of business control are the keynote of the course.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Professor LINDSEY and Dr. LARCOM.

82. **II.** ADVANCED BUSINESS ACCOUNTING. — For seniors. This course covers the problems of corporation accounting and accounting for cooperative organizations. Considerable time is spent on problems in amortization, depreciation, and the preparation, analysis, and interpretation of financial statements.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Dr. LARCOM.

85. **I.** LEGAL ASPECTS OF ECONOMIC TRANSACTIONS. — For seniors and graduate students. A continuation of Course 58.
3 class hours. Credit, 3.
Mr. SMART.

Prerequisite, Economics 58.

91. I. 92. II. Seminar. — For seniors and graduate students. Research in economic theory; problems of labor, commerce, and industry. Library work and reports. If desirable some other economic study may be substituted.

1 or 2 2-hour conference periods, credit, 1 to 3.
The Department.

Education and Psychology.

Professor Welles, Professor Glick, Professor DeSilva, Dr. Neet, Mr. Heald,[1] Mr. Carpenter.

The work in this department may be said to have three major objectives: (1) to be of maximum service to those students who plan to engage in some form of educational work; (2) to provide training of a cultural nature in education, psychology, and philosophy for the educated layman; (3) to afford intensive training for those who wish to specialize in any of the subject matter fields of the department. Students intending to teach vocational agriculture or related subjects need to consult the head of the department and the State Agent for Agricultural Teacher-training as early as possible to insure a desirable range of preparation.[2]

Education.

Elective Courses.

65. I. Principles and Methods of Teaching. — For juniors; seniors may elect. The course is offered for those who are expecting to teach. By means of text, case studies, current educational literature, related books and lectures, teaching and management ideals and procedures are set up. The general plan is one of discussion with numerous short class papers. During the final weeks of the semester attention is given the special methods of teaching certain subjects in secondary schools.

3 class hours. Credit, 3.
Professor Welles.

67. I. History of Education. — For juniors; seniors may elect. This course opens a long vista in the development of one very important human endeavor — the passing on to succeeding generations of the accumulated social heritage of the race. The knowledge of this history is assuming greater importance for all teachers in the minds of educational supervisors. The main support is text and supplementary reading with lectures and discussion for clarity and emphasis.

3 class hours. Credit, 3.
Dr. Neet.

72. II. Vocational Education in Agriculture. — For juniors; seniors and graduate students may elect with permission of the head of the department. The course demands certain prerequisites of experience and objective which make permission necessary. It is the first of the series of special courses (72, 78, 82) with a survey of vocational education and an introduction to the teaching of agriculture in secondary schools. Information and observation preparatory to the apprenticeship course. Required of candidates for the agricultural teacher-training certificate.

3 class hours. Credit, 3.
Professor Welles and Vocational Division of State Department of Education.

74. II. Classroom Management. — For seniors; juniors may elect. An offering to prospective teachers for forming right ideals about working conditions in schools and ways of maintaining such conditions. A supplement to the course in Principles and Methods of Teaching by emphasis on class management in the desire to prevent some of the many failures of beginners in teaching. Text material, discussion, and case studies with some observation.

3 class hours. Credit, 3.
Professor Welles.

[1] State Agent for Agricultural Teacher-Training representing the State Department of Education in the administration of vocational education acts.

[2] A vocational Teacher-Training certificate will be awarded by the State Division of Vocational Education to those who qualify. (Required courses, 72, 78, 82. Recommended course 65.)

76. **II.** Methods in Extension Teaching. — For seniors; juniors and others qualified may elect. Admission after consultation with the instructor in charge. The course deals with various phases of extension work and the methods by which this work is accomplished. The specific lines studied are those of the state director, state leaders, agricultural and home economics specialists, and county agricultural, home demonstration, and 4-H club agents. The different phases of the work will be discussed by members of the extension staff who are specialists in their particular lines.
2 class hours. Credit, 2.
Mr. Carpenter.

78. **I** and **II.** Apprentice Teaching. — For a limited number of qualified candidates in vocational education. A full year in absentia, normally following the junior year in college, teaching agriculture, horticulture, and related subjects. Candidates should have completed the course in Education 72, and in Education 65 if possible, and must apply early to the head of the department. Occasionally open to graduate students.
Maximum credit, 6 semester hours.
Professor Welles and Vocational Division of State Department of Education.

80. **I** and **II.** Supervised Teaching. — For seniors; qualified juniors may be admitted. Enrollment in the course requires consent of instructor in view of its specialized nature. Special professional reading, assigned and optional, is required. A conference is required each week for reporting on the work each student is doing and for general discussion. The amount of credit depends upon the amount and character of the work. A thesis covering all work in the course during the semester is required.
1 class hour. 2 to 4 laboratory hours, credit, 1–2.
Professor Welles and Dr. Neet.

82. **II.** Technique of Teaching Agriculture. — For seniors and others qualified, by arrangement with the head of the department. By preference this course follows Courses 72 and 78. It covers the material, methods, policies, and special requirements of the state for teaching agriculture and related subjects in vocational schools. Required of candidates for the agricultural teacher-training certificate.
2 class hours. Credit, 2.
Professor Welles and Vocational Division of State Department of Education.

84. **II.** Secondary Education. — For seniors; juniors may elect. The course has two main objectives: (1) To give a perspective of the high school as to its aims, relations, organization, and functions; (2) To present in some detail the agencies and operations that carry these out through the curricula, schedules, and extra-curricular activities. A basic text is used with lectures, supplementary reading, and problem assignments.
3 class hours. Credit, 3.
Dr. Neet.

95. **I** and **II.** Problems in Education, Psychology, or Philosophy. — For seniors who have shown outstanding ability, by arrangement with the members of the department. Problems covering important phases of education, psychology, or philosophy to be worked out and studied by special readings, surveys, reports, and observation. A thesis covering the semester's work is required.
Credit, 2.
The Department.

Psychology.

Required Course.

26. **I** and **II.** General Psychology. — For sophomores. This is an introductory course dealing with the theories and principles of psychology in regard to the understanding and control of human thought, feeling, and action.
3 class hours. Credit, 3.
Professors Glick, DeSilva, and Dr. Neet.

51. **I.** Experimental Psychology. — For juniors; seniors may elect. The course is designed to acquaint students with typical problems and techniques of research in psychology. Each student will be allowed to spend a certain amount of time on an independent problem in addition to demonstrations, assigned readings,and class experiments.
3 class hours. Credit, 3.
Prerequisite, Psychology 26. Professor DeSilva.

54. **II.** Educational Psychology. — For juniors; seniors may elect. The course deals with the native equipment of the child, the nature of learning, individual differences, mental testing, transfer of training, etc.
3 class hours. Credit, 3.
Professor Glick and Dr. Neet.
Prerequisite, Psychology 26 or the consent of the instructor.

85. **I.** Abnormal Psychology and Mental Hygiene. — For seniors; juniors may elect. A study of abnormal personalities with a view to a better understanding and control of oneself.
3 class hours. Credit, 3.
Professor DeSilva.
Prerequisite, Psychology 26.

86. **II.** Industrial Psychology. — For seniors; juniors may elect. A study of the human factor in business and industry.
3 class hours. Credit, 3.
Professor DeSilva.
Prerequisite, Psychology 26.

89. **I.** Psychology of Guidance. — For seniors; juniors may elect. Guidance is conceived in a broad sense, and such topics as religious and esthetic guidance are considered as well as vocational guidance. Special attention is given to the study of interests, aptitudes, and personality traits, and the psychological devices for measuring and evaluating these are considered and applied. Practice is given in administering and scoring tests, and statistical devices are used to interpret results.
3 class hours. Credit, 3.
Professor Glick.
Prerequisite, Psychology 26.

90. **II.** Contemporary Psychologies. — For seniors; juniors may elect. A study of the various contemporary schools or theories of psychology with an attempt to evaluate each in its application to psychological problems in general with emphasis upon child psychology in particular.
2 class hours. Credit, 2.
Professor DeSilva.
Prerequisite, Psychology 26 or the consent of the instruct .

Philosophy.

Elective Courses.

61. **I.** Fundamentals of Philosophy. — For juniors; seniors may elect. A general approach to the study of philosophy both from the standpoint of method and content. This course attempts to provide a background for the understanding and evaluation of theories of education, religion, ethics, metaphysics, etc.
3 class hours. Credit, 3.
Professor Glick.

62. **II.** History of Philosophy (1935–36). — For juniors; seniors may elect. A survey of the development of thought from the early Greeks to the recent past. Emphasis is placed upon the relation of philosophy to life as a whole with emphasis upon ethical, political, religious, educational, and metaphysical problems. Given in alternate years.
3 class hours. Credit, 3.
Professor Glick.

64. **II.** Ethics (1936–37). — For juniors; seniors may elect. A study of the fundamental ethical theories and practices both historical and contemporary. Ethical theories are studied in relation to different types of civilizations and an attempt is made to evaluate the significance of each in our present civilization. Given in alternate years.
3 class hours. Credit, 3.
Professor Glick.

History and Sociology.

Professor Mackimmie, Assistant Professor Cutler, Assistant Professor Caldwell, Mr. Williams, Mr. Cary.

The courses in history and sociology are planned with the purpose of giving the student that knowledge and understanding of the important factors and problems in this field of study and life which every active citizen and educated man ought to have. In addition they enable a student to specialize in history and sociology and related science, or in social work.

History.

Required Course.

1. **I and II.** History of the United States. — For freshmen. A study of the growth of the United States with emphasis upon the development of republican principles.
3 class hours. Credit, 3.
Assistant Professor Caldwell and Mr. Cary.

Elective Courses.

25. **I.** American Government. — For sophomores. A study of the historical development, structure, and operation of our government.
3 class hours. Credit, 3.
Assistant Professor Caldwell.

27. **I.** Economic History of the United States. — For sophomores. A study of the economic development of the United States. with attention to the interaction between economic, social, and political conditions.
3 class hours. Credit, 3.
Assistant Professor Caldwell.

32. **II.** English History. — For sophomores; juniors and seniors may elect. A study of the political, social, and religious movements in England, with special reference to an understanding of English literature.
3 class hours. Credit, 3.
Professor Mackimmie and Assistant Professor Caldwell.

51. **I.** Government. — For juniors and seniors. Forms and methods of the governments of Europe; historic types and theories of government; progress and problems of democracy, and new reform movements in organization and administration; new tendencies towards social legislation and extension of governmental control.
3 class hours. Credit, 3.
Professor Mackimmie.

53. **I.** Modern European History. — For juniors and seniors. The political and social history of the principal countries of Europe from 1500 to 1830.
3 class hours. Credit, 3.
Professor Mackimmie and Assistant Professor Caldwell.

54. **II.** European History since 1830. — For juniors and seniors. The rise of nationalism and imperialism; the unification of Italy and of Germany; the Third French Republic; European expansion; the Russo-Japanese War; the World War. While this course is a continuation of Course 53, it is complete in itself and may be elected by those who have had no history training. Its aim is to provide a basis for an understanding of present-day conditions.
3 class hours. Credit, 3.
Professor Mackimmie and Assistant Professor Caldwell.

55. **I.** The History of Religions. — For juniors and seniors. Primitive religions, Hinduism, Buddhism, Mohammedanism, and Christianity. Consideration will be given to the application of the material of the course to current religious problems.
2 class hours. Credit, 2.
Mr. Williams.

56. **II.** The Literature of the Bible. — For juniors and seniors. An introduction to the literature and teachings of the Old and New Testaments.
2 class hours. Credit, 2.
Mr. Williams.

58. **II.** The Problems of Religion. — For juniors and seniors. The field of this course is that of the philosophy of religion. However, no attempt will be made to cover all the problems of this discipline. Only those problems will be considered which the students electing the course desire to have considered.
2 class hours. Credit, 2.
Mr. Williams.

60. **II.** The United States since the Civil War. — For juniors and seniors. An historical treatment of the political, ecomonic, social, and intellectual development in recent years. The new South, development of the West, the rise of cities, expansion of the power of the Federal Government, social politics, progressivism, American Imperialism and participation in world affairs, American life, letters and art.
3 class hours. Credit, 3.
Mr. Cary.

76. **II.** History of the Renaissance. — For seniors only. The later Middle Ages; the Church at the height of power; the rise of nationalities; the Italian towns; the New Learning and its relation to art, science, invention, geographical discoveries; spread and effects of the Renaissance.
3 class hours. Credit, 3.
Professor Mackimmie.

Sociology.

Elective Courses.

27. **I.** Elements of Sociology. — For sophomores; others admitted by permission of instructor. A study of the individual considered as a member of his various groups; the group fallacy; the conditioned reflex; emotion; personality; social behavior; social stimulation; the group and the crowd; social attitudes, ideals, and adjustments; influence of environment; rural life; field and viewpoint of scientific sociology. Lectures and readings.
3 class hours. Credit, 3.
Assistant Professor Cutler.

51. **I.** 52. **II.** Sociological Laws and their Application. — For juniors; seniors may elect. A study of the scientific principles which characterize the relation of the individual to his various groups — the family, the school, the club, recreational institutions, the church, business, the government, and others. Practical application. This study is partly directed toward rural phases of the subject. Lectures, readings, field work, discussions, and topical reports. These courses are sequential, but may be elected independently.
3 class hours. Credit, 3.
Assistant Professor Cutler.
Prerequisite, Sociology 27, or the consent of the instructor.

54. **II.** Historical Sociology. — For juniors; seniors may elect. Characteristics of primitive man, departure from the animal status and beginnings of civilization; origin and development of industries, arts, and sciences, including agriculture, of languages, warfare, migrations, and social institutions; a study of the powerful natural and human forces that have brought man from the early stages to modern development; characteristic features of the leading civilizations

and races of ancient and modern times; beneficial and dangerous factors in American life.

5 class hours. Credit, 5.

Assistant Professor CUTLER.

Prerequisite, Sociology 27, or the consent of the instructor.

75. **I.** PROBLEMS OF SOCIAL REFORM. — For seniors; juniors by permission. Such current problems as eugenics, race suicide, divorce, crime and delinquent classes, prison reform, prevention and treatment of dependents and defectives, poverty, its causes and preventions; constructive modern social reform movements for insurance of wage earners, farm relief, protection of childhood, assurance of safety, health, and play time for all classes. The correctional and charitable institutions of Massachusetts are studied in considerable detail.

5 class hours. Credit, 5.

Assistant Professor CUTLER.

Prerequisite, Sociology 27, or the consent of the instructor.

77. **I.** FIELD WORK IN SOCIOLOGY. — For seniors; juniors may elect. Designed to meet the needs of students who wish to do some constructive work in social service while still in college. Any project for which credit in this course is to be asked must first have the approval of the head of the department.

2 to 6 laboratory hours, credit, 1 to 3.

Assistant Professor CUTLER.

Prerequisite, Sociology 27, or the consent of the instructor.

78. **II.** SOCIOLOGICAL RESEARCH. — For seniors; juniors may elect. Research methods — measurements, exploration, criticism, surveys; a careful study of the scientific method as applied to social problems; the technique of investigation and research; the procedure of gathering sociological data by means of the survey; the interpretation and graphic presentation of social facts. Text, lectures, field and laboratory work.

3 class hours. Credit, 3.

Assistant Professor CUTLER.

Prerequisite, Sociology 27, or the consent of the instructor.

79. **I.** 80. **II.** SEMINAR. — Enrolment is open to graduate students, and seniors majoring in social science who are especially prepared. Topics recently studied are: modern economic theory; civilization as reflected in great literature; sociology of American colonies in the Caribbean region; success in community leadership; sociology of the Old World and Far East; the standard of living in American life; proposed improvements in local government; international social problems; the art of straight thinking; Utopias; the state government of Massachusetts. Courses are sequential but may be elected independently.

2 class hours. Credit, 2.

Professors MACKIMMIE and CUTLER.

84. **II.** CONSERVATION OF THE FAMILY (1935–36). — For seniors; juniors may elect. A study of some of the modern problems in family life which can be traced to ancient lineage; ways in which an individual and society can help to conserve the family; some hindrances to normal family life; the contribution of the successful family toward community and world progress. Given in alternate years.

3 class hours. Credit, 3.

Professor SKINNER.

Languages and Literature.

Professor RAND, Professor JULIAN, Professor PRINCE, Assistant Professor GODING, Assistant Professor FRAKER, Assistant Professor GOLDBERG, Mr. ELLERT, Mr. TROY, Miss BEAMAN, Mr. HELMING, Mr. STRATTON, Mr. LYLE, Mr. DOW.

The courses in English are intended to enable students to express themselves effectively and to appreciate the ideals of English-speaking people throughout their history; those in French, Spanish, and German to give a practical knowledge of these languages for the purpose of wider reading and research, leading to a better understanding of the art and the science and the peoples concerned; those in music, to furnish in a non-technical way, a background of the history of music and its interpretation.

English.

Required Courses.

1. **I. 2. II.** English Composition. — For freshmen. Intended to teach straight thinking, sound structure, clear and correct expression. Lectures, recitations, theme writing, and conferences.
3 class hours. Credit, 3.
Professors Prince and Rand, Dr. Goldberg, Mr. Troy, Miss Beaman, Mr. Helming.

25. **I. 26. II.** A Survey of English Literature. — For sophomores. A general reading course with lectures, from the beginning of English literature to the end of the Nineteenth Century.
2 class hours. Credit, 2.
Professor Prince.

29. **I. 30. II.** Public Speaking. — For sophomores. The purpose of the course is to teach, by means of practice in the composition, memorization and delivery of short speeches, an effective, confident, and clearly enunciated presentation.
1 class hour. Credit, 1.
Dr. Goldberg, Mr. Troy, Miss Beaman, Mr. Helming, Mr. Dow.

Elective Courses.

50. **II.** Argumentation and Oratory. — For juniors and seniors. It presents the fundamental principles of argumentation with the principles and the practice of formal oratory, prescribing the preparation and delivery of one original oration, and reading in oratory. It is recommended for those who desire to enter the intercollegiate debates or the Flint Contest.
3 class hours. Credit, 3.
Professor Prince.

51. **I.** Romantic Poetry (1936–37). — For juniors and seniors. A study chiefly in the beginning of Romanticism in English poetry as found in the work of Collins, Gray, Burns, and Blake, with considerable attention to the culmination of Romanticism in the poetry of Shelley and Keats. Given in alternate years.
3 class hours. Credit, 3.
Professor Prince.

52. **II.** English Literature from Donne to Milton (1936–37). — For juniors and seniors. A treatment of the "Metaphysical School", the "Church Poets," and other writers of the period is brought to bear upon an intensive study of Milton. Given in alternate years.
3 class hours. Credit, 3.
Dr. Goldberg.

53. **I.** English Prose of the Eighteenth Century (1935–36). — For juniors and seniors. A brief exposition of the thinking of the period, in philosophy, government, and criticism is followed by a study of essayists and letter writers from Defoe to Godwin. Given in alternate years.
3 class hours. Credit, 3.
Professor Prince.

55. **I.** English Prose of the Nineteenth Century. — For juniors and seniors. Consideration of the major prose writers of the early part of the century, particularly in relation to the English periodicals of their day and to the Romantic Movement in England, France, and Germany, is followed by a study of the chief Victorian prose writers. Especial attention is devoted to Carlyle, Arnold, and Newman.
3 class hours. Credit, 3.
Dr. Goldberg.

56. **II.** American Literature (1936–37). — For juniors and seniors. A course in the chief American writers, among those studied being Irving, Cooper, Melville,

Hawthorne, Emerson, Freneau, Bryant, Poe, Longfellow, and Whitman. Given in alternate years.
3 class hours. Credit, 3.
Professor PRINCE.

58. **II.** VICTORIAN POETRY (1935–36). — For juniors and seniors. A study of the Pre-Raphaelites, Tennyson, and Browning. Given in alternate years.
3 class hours. Credit, 3.
Professor RAND.

60. **II.** CHAUCER (1935–36). — For juniors and seniors. Reading of the principal works of Chaucer; a study of Chaucer's development as a creative artist; an attempt to appreciate his humanism. Given in alternate years.
3 class hours. Credit, 3.
Professor PRINCE.

62. **II.** BIOGRAPHY (1935–36). — For juniors and seniors. A study of distinguished biographies written in English and noteworthy both as portraits of significant people and as examples of biographical method. Given in alternate years.
3 class hours. Credit, 3.
Mr. HELMING.

64. **II.** ROMANTIC POETRY (1936–37). — For juniors and seniors. A contrasting study of Byron and the Lake Poets, and in some ways a continuation of Course 51. Given in alternate years.
3 class hours. Credit, 3.
Professor RAND.

65. **I.** CREATIVE WRITING. — For juniors and seniors. Advanced work in writing based upon specimens by authors of established reputation and upon the personal experience of the student.
3 class hours. Credit, 3.
Professor RAND (1936–37), Mr. HELMING (1935–36).

67. **I.** LIBRARY RESEARCH (1935–36). — For juniors and seniors. Each student makes a considerable investigation of a subject of his own selection. An orderly accumulation of material is followed by one or more formal interpretations of its significance. Given in alternate years.
3 class hours. Credit, 3.
Professor RAND.

69. **I.** TUDOR LITERATURE (1936–37). — For juniors and seniors. A study of the non-dramatic verse and prose of the Tudor period, with special emphasis upon Spenser's "Faerie Queene." Given in alternate years.
3 class hours. Credit, 3.
Mr. HELMING.

71. **I.** ELIZABETHAN DRAMATISTS. — For juniors and seniors. A study of Elizabethan drama, exclusive of Shakespeare, with special consideration of the plays of such men as Lyly, Peele, Greene, Kyd, Marlowe, Jonson, Beaumont, Fletcher, Webster, Massinger.
3 class hours. Credit, 3.
Professor PRINCE.

72. **II.** HISTORY OF LITERARY CRITICISM (1935–36). — For juniors and seniors. Major theories of criticism, from Aristotle to the present, are considered in relation to the philosophic backgrounds out of which they emerge and to attendant critical practice. This course is designed especially for students concentrating in languages and literature. Given in alternate years.
3 class hours. Credit, 3.
Dr. GOLDBERG.

76. **II.** ENGLISH PROSE FICTION (1936–37). — For juniors and seniors. A course of lectures and reading designed to illustrate the development of English

prose fiction, with emphasis upon the great novels of the eighteenth and nineteenth centuries. Given in alternate years.
3 class hours. Credit, 3.
Mr. Helming.

79. **I.** Shakespeare. — For juniors and seniors. This course is based upon the reading of about thirty of Shakespeare's plays, and attempts both to indicate the evolution of the dramatist and to emphasize the various phases of his art.
3 class hours. Credit, 3.
Professor Rand.

80. **II.** Modern Drama (1936–37). — For juniors and seniors. This course traces the development of English drama from the time of Ibsen to the present day. Its purpose is to impart an intelligent and sympathetic interest in the theatre of the twentieth century. Given in alternate years.
3 class hours. Credit, 3.
Professor Rand.

82. **II.** Modern Poetry (1935–36). — For juniors and seniors. This course attempts to trace the spirit of twentieth century poetry from such authors as Hardy, Whitman, and Emily Dickinson to those of the present day. Given in alternate years.
3 class hours. Credit, 3.
Professor Rand.

French.

Elective Courses.

1. **I.** 2. **II.** Elementary French. — For freshmen; sophomores, juniors, and seniors may elect. The essentials of grammar are rapidly taught and will be accompanied by as much reading as possible.
3 class hours. Credit, 3.
Assistant Professors Fraker and Goding.

5. **I.** 6. **II.** Intermediate French. — For freshmen and sophomores; juniors and seniors may elect. Grammar review and composition. Training for rapid reading. The reading of short stories, novels, and plays, selected readings from periodicals and scientific texts in the library.
3 class hours. Credit, 3.
Assistant Professors Fraker and Goding.
Prerequisites, French 1 and 2 or their equivalent.

7. **I.** 8. **II.** French Survey. — For freshmen and sophomores; juniors and seniors may elect. A general survey of the history of French literature and the development of French culture, with representative works of the important periods.
3 class hours. Credit, 3.
Assistant Professors Fraker and Goding.
Prerequisites, French 5 and 6 or their equivalent.

29. **I.** 30. **II.** French Classicism (1935–36). Alternate with Courses 31. I and 32. II. — For sophomores; juniors and seniors may elect. A survey of the Classical period, with readings from representative works.
3 class hours. Credit, 3.
Assistant Professor Fraker.
Prerequisites, French 7 and 8 or their equivalent.

31. **I.** French Romanticism (1936–37). Alternates with Course 29. — For sophomores; juniors and seniors may elect. A detailed study of the Romantic period. Readings from Hugo, de Vigny, Lamartine, de Musset, and others. The influence of English, German, and Italian literature is stressed.
3 class hours. Credit, 3.
Assistant Professor Goding.
Prerequisites, French 7 and 8 or their equivalent.

32. **II.** French Realism (1936–37). Alternates with Course 30. — For sophomores; juniors and seniors may elect. A detailed study of the Realistic period and the modern writers. Readings from Balzac, Flaubert, Stendahl, Loti, Daudet, Anatole France, and others.
3 class hours. Credit, 3.
Assistant Professor Goding.

Prerequisites, French 7 and 8 or their equivalent.

71. **I.** Voltaire (1936–37). Alternates with Course 79. — For juniors and seniors. A study of the eighteenth century through the life and works of Voltaire.
3 class hours. Credit, 3.
Assistant Professor Fraker.

Prerequisites, French 7 and 8 or their equivalent.

72. **II.** French Lyricism (1936–37). Alternates with Course 80. —For juniors and seniors. A study of the French lyric poets, including excerpts in modern translation from the Middle Ages and from the various modern movements through the nineteenth century. Collateral readings and reports.
3 class hours. Credit, 3.
Assistant Professor Fraker.

Prerequisites, French 7 and 8 or their equivalent.

79. **I.** Balzac (1935–36). Alternates with Course 71. — For juniors and seniors. A study of the life, works, and ideas of Balzac based upon a careful reading of about fifteen of his most important novels.
3 class hours. Credit, 3.
Assistant Professor Goding.

Prerequisites, French 7 and 8 or their equivalent.

80. **II.** Advanced Grammar and Composition (1935–36). Alternates with Course 72. — For seniors; juniors may elect with the consent of the instructor. A thorough review of grammar, with increasing attention paid to style in both oral and written composition. The course also includes practice teaching and outside reading on methods of teaching French.
3 class hours. Credit, 3.
Assistant Professor Goding.

Spanish.

Elective Courses.

51. **I.** 52. **II.** Elementary Spanish. — For juniors and seniors; open to other students upon arrangement. Grammar, exercises in composition and conversation, reading of selected short stories.
3 class hours. Credit, 3.
Assistant Professor Fraker.

75. **I.** 76. **II.** Modern Spanish Authors. — For seniors. Reading from modern Spanish novel and drama; composition; outside reading.
3 class hours. Credit, 3.
Assistant Professor Fraker.

Prerequisite, Spanish 52.

German.

Elective Courses.

1. **I.** 2. **II.** Elementary German. — For freshmen; sophomores, juniors, and seniors may elect. Grammar, reading, and prose composition. Special emphasis is placed on the acquirement of a fundamental stem vocabulary and the ability to understand simple German paragraphs in German.
3 class hours. Credit, 3.
Professor Julian, Mr. Ellert, and Mr. Lyle.

5. **I.** 6. **II.** Advanced German. — For freshmen; sophomores, juniors and seniors may elect. Reading and study of some important literary productions of

the classical period; spoken German; passages of prose and poetry to commit to memory.
3 class hours. Credit, 3.
Mr. Ellert.

Prerequisites, German 25 and 26, or Entrance German.

25. I. 26. II. Intermediate German. — For sophomores; juniors and seniors may elect. The German short story; the simpler German drama; grammar review and advanced prose composition. Simple passages of prose and poetry to commit to memory.
3 class hours. Credit, 3.
Mr. Ellert.

Prerequisites, German 1 and 2.

27. I. 28. II. Advanced German. — For sophomores; juniors and seniors may elect. Goethe's Faust.
3 class hours. Credit, 3.
Professor Julian.

Prerequisites, German 5 and 6, or 25 and 26.

51. I. 52. II. Scientific German. — For juniors and seniors. Intensive and specialized reading of literature in standard German scientific journals and reference books.
3 class hours. Credit, 3.
Professor Julian.

Prerequisites, German 5 and 6, or 25 and 26.

75. I. 76. II. Early German Literature and History. — For seniors. The *Niebelungenlied* and *Parzival* in modern German versions.
3 class hours. Credit, 3.
Professor Julian.

Prerequisites, German 27 and 28.

79. I. 80. II. Conversational German. — Open to advanced students in German, by permission of the instructor in charge. Practice in the oral use of German, based on reading material prepared in advance, and dealing with present-day Germany.
2 class hours. Credit, 2.
Professor Julian and Mr. ———.

Music.

Elective Courses.

1. I. 2. II. Choral Singing. — For freshmen, sophomores, juniors, and seniors. This course is designed to acquaint the student, through study and performance, with examples of the best choral music of all periods. Admission is by approval of the instructor. This course is recommended for those who desire to prepare themselves for participation in choral services.
2 scheduled hours. Credit, 1.
Mr. Stratton.

51. I. History and Appreciation of Music. — For juniors and seniors. The Classical School. Works of Bach, Handel, Haydn, and Mozart are performed and studied. Lectures, musical illustrations, and outside readings.
3 scheduled hours. Credit, 2.
Assistant Professor Goding.

52. II. History and Appreciation of Music. — For juniors and seniors. A continuation of Course 51. The Romantic School: Beethoven, Schubert, Weber, Mendelssohn, Schumann, Chopin, Berlioz, Liszt. The Italian, French, and German schools of opera; modern and contemporary composers.
3 scheduled hours. Credit, 2.
Assistant Professor Goding.

Prerequisite, Music 51.

61. I. 62. II. Evolution of Modern Music. — For juniors and seniors. A thorough survey is made of the most important trends and personalities of music, from the earliest times to the present. It is designed to acquaint the student with the background for the understanding of contemporary music, which is treated in detail. Lectures, illustrations, and outside readings.
3 scheduled hours. Credit, 2.
Mr. Stratton.

75. I. 76. II. Harmony. — For juniors and seniors. A study of the development of harmonic principles up to the present time. Part-writing for four voices, and harmonic analysis. Emphasis is placed upon ear-training, to promote the student's aural imagination and recognition of all material studied. Previous musical experience is desirable, but not required. Course 75 is prerequisite to Course 76.
3 scheduled hours. Credit, 2.
Mr. Stratton.

DIVISION OF PHYSICAL EDUCATION.

Professor Hicks.

Student Health.

Professor Radcliffe, Dr. Rakieten.

Required Course.

1. I. Hygiene. — For freshmen. Given in separate sections for men and women. Lectures on personal hygiene, including the physiological basis for sound health habits.
2 class hours for one-half semester. Credit, 1.
Dr. Rakieten.

Physical Education for Men.

Professor Gore, Professor Radcliffe, Professor Taube, Assistant Professor Derby. Mr. Ball, Mr. Briggs, Mr. Rogers, Mr. Kauffman.

The work of physical education for men covers three phases: the required work in recreation the first two years, and the opportunity to specialize the last two years either in Curriculum A, Physical Education and Teacher-Coaching, or Curriculum B, Recreation and Leisure-Time Leadership Training.

Required Courses.

3. I. Carry-over Value Sports and Team Games. — For freshmen. One hour a week of carry-over sport instruction in swimming, golf, tennis, fishing, and hiking is required. Two sessions a week are elective. Men may choose recreation which includes volley ball, touch football, swimming, and track and field achievement tests, or one of the following team games: freshman football, freshman soccer, freshman swimming, or freshman cross country.
1 1-hour laboratory and 2 2-hour laboratory periods, 1st half of semester, Credit, 1.
The Department.

4. II. Carry-over Value Sports and Team Games. — For freshmen. The one-hour a week requirement of carry-over value sport instruction in swimming, golf, tennis, and hiking is continued. Two sessions a week are elective. Men may choose recreation which includes softball, swimming, tennis and golf or one of the following team games: freshman baseball, freshman track, varsity swimming, varsity spring football or varsity spring soccer.
1 1-hour laboratory and 2 2-hour laboratory periods, 2d half of semester, Credit, 1.
The Department.

23. I. Carry-over Value Sports and Team Games. — For sophomores. Men may elect recreation which includes tennis, golf, swimming, badminton, and archery, or one of the following team sports: varsity swimming, varsity football, varsity soccer, varsity cross country or outing club hiking.
2 2-hour laboratory periods, 1st half of semester, credit, 1.
The Department.

24. **II.** Carry-over Value Sports and Team Games. — For sophomores. Men may elect archery, badminton, tennis, golf, varsity swimming, varsity baseball, varsity track, varsity spring football, varsity spring soccer, or outing club hiking.

2 2-hour laboratory periods, 2d half of semester, credit, 1.
The Department.

Elective Courses.

Admission by permission only.

51. **I.** Introductory Course for Teacher-Coaches. — For juniors and seniors. This course outlines the coaching of football, soccer, and basketball.
3 class hours. Credit, 3.
Professor Taube and Mr. Briggs.

52. **II.** Introductory Course for Teacher-Coaches. — For juniors and seniors. Continuation of Course 51. This course outlines the coaching of baseball, track and field athletics, and hockey and winter sports, also athletic pedagogy.
2 class hours. 1 2-hour laboratory period, by arrangement, credit, 3.
Professor Taube, Assistant Professor Derby, Mr. Ball.

53. **I.** Physical Education Theory and Practice. — For juniors and seniors. This course includes the objectives, organization, significance, and content of physical education in the grade schools. The course is correlated with the requirements of the State Department of Education.
2 class hours. 1 2-hour laboratory period, by arrangement, credit, 3.
Assistant Professor Derby.

54. **II.** Physical Education Theory and Practice. — For juniors and seniors. This course includes the objectives, significance, organization and content of physical education in junior and senior high school. The course is correlated with the requirements of the State Department of Education.
2 class hours. 1 2-hour laboratory period, credit, 3.
Assistant Professor Derby.

55. **I.** History and Purposes of Physical Education. — For juniors and seniors. A brief study of the history of the development of the various systems of physical education and a study of the aims and ideals of present-day physical education. Lectures, textbooks, reports on assigned readings, and a final outline.
2 class hours. Credit, 2.
Professor Gore.

56. **II.** Organization and Administration of Physical Education. — For seniors. Considers the organization and administration of a department of physical education.
2 class hours. Credit, 2.
Professor Gore.

57. **I.** Camping Technique. — For juniors and seniors. This course covers the details of camping technique, including the special skills of camping in the open.
2 class hours. 1 2-hour laboratory period, by arrangement, credit, 3.
Professor Gore co-operating with the Department of Forestry and other Departments.

58. **II.** Camping Leadership, Administration and Maintenance. — For juniors and seniors. The development of the camping idea. Organized camps as a part of education, camp standards and practices, camp program building. The qualifications necessary for camp counselors and camp administrators.
2 class hours. 1 2-hour laboratory period, by arrangement, credit, 3.
Professor Gore.

59. **I.** Scouting Elements and Principles. — For juniors and seniors. A course in the elements and principles of Scoutmastership.
1 class hour. 1 2-hour laboratory period, credit, 2.
Professor Gore co-operating with Local Scout Executives.

71. **I.** 72. **II.** Special Problems Course in Physical Education. — For seniors specializing in physical education. Presentation and discussion of research work in physical education, health education or athletics. Each student will make a special study of some phase of physical education.
3 class hours. Credit, 3.
The Department.

73. **I.** Recreation Activities and Skills. — For seniors; juniors may elect. A study of recreation technique and skills and methods of recreation leadership.
2 class hours. 1 2-hour laboratory period, by arrangement, credit, 3.
Professor Gore co-operating with the Extension Service and other Departments.

74. **II.** Recreation Organization and Administration. — For seniors; juniors may elect. Administrative problems of community recreation programs, leisure surveys, supervision of recreational areas, park recreation, program making, and the lay-out and equipment of play facilities.
2 class hours. 1 2-hour laboratory period, by arrangement, credit, 3.
Professor Gore co-operating with the Extension Service and other Departments.

75. **I.** Health Education Theory and Practice. — For seniors. This course gives the teaching supervision, and administration of school health programs. It also gives first aid as applied in the home, on the street, and on the athletic field. Men who complete this course satisfactorily will receive American Red Cross First Aid Certificates.
1 class hour. 1 2-hour laboratory period, by arrangement, credit, 2.
Dr. Radcliffe and Mr. Briggs.

77. **I.** Anatomy General. — For juniors. A course in structural human anatomy.
2 class hours. 1 2-hour laboratory period, credit, 3.
Dr. Radcliffe.

78. **II.** Anatomy Applied. — For juniors. A course aimed to give the anatomical application basal to a thorough understanding of the mechanical problems in apparatus, athletic and corrective exercises.
2 class hours. 1 2-hour laboratory period, credit, 3.
Dr. Radcliffe.

Physical Education for Women.

Mrs. Hicks, Miss Blatchford.

Physical education is a very important part of each woman's education. It is the aim of the department to develop skills and appreciations which help to complete and enrich the life of the student. The organic power and neuromuscular skills, the emotional release and control gained by physical education provides the individual woman with ways of meeting life's situations.

Required Courses.

7. **I.** Recreation. — For freshmen. Outdoor season: archery, games, soccer, field hockey, special gymnastics; indoor season: badminton, basketball, clog, folk, and tap dancing (rhythmic dances), special gymnastics, swimming, volley ball, games.
2 2-hour laboratory periods, credit, 2.
Miss Blatchford.

8. **II.** Recreation. — For freshmen. Indoor season: badminton, basket-ball, clog, folk, and tap dancing, special gymnastics, indoor baseball, swimming, volley ball, games; outdoor season: archery, baseball, special gymnastics.
2 2-hour laboratory periods, credit, 2.
Miss Blatchford.

27. **I.** RECREATION. — For sophomores. Outdoor season: archery, soccer, field hockey, special gymnastics; indoor season: badminton, basketball, dancing, special gymnastics, swimming.

2 2-hour laboratory periods, credit, 2.
Mrs. HICKS.

28. **II.** RECREATION. — For sophomores. Indoor season: badminton, basketball, dancing, special gymnastics, indoor baseball, swimming; outdoor season: archery, baseball, special gymnastics.

2 2-hour laboratory periods, credit, 2.
Mrs. HICKS.

Elective Courses.

61. **I.** 62. **II.** RECREATION. — For juniors. Outdoor season: sports and games depending upon the physical condition and needs of the students; indoor season: creative dancing.

2 1-hour laboratory periods, credit, 1.
Mrs. HICKS.

81. **I.** 82. **II.** RECREATION. — For seniors. Outdoor season: sports and games for physical benefits and further development of skill and for social contacts; indoor season: creative dancing.

2 1-hour laboratory periods, credit, 1.
Mrs. HICKS.

Department of Military Science and Tactics.

Colonel HORACE T. APLINGTON, Cav. (D. O. L.), U.S.A.; Major HERBERT E. WATKINS, Cav. (D. O. L.), U.S.A.; Captain LEO B. CONNER, Cav. (D. O. L.), U.S.A.; Technical Sergeant JONATHAN MADDEN, U.S.A., Retired; Technical Sergeant JAMES A. WARREN, Cav. (D. E. M. L.), U.S.A.; Sergeant FRANK CRONK, Cav. (D. E. M. L.), U.S.A.; Sergeant ROY TANNER, Cav. (D. E. M. L.), U.S.A.; and a detachment of enlisted men of the United States Army.

Under act of Congress, July 2, 1862, the College was required to provide a two-year course in military instruction under a regular army officer. All able-bodied four-year male students are required to take this course. Under act of Congress, June 3, 1916, as amended by act of Congress, September 8, 1916, there was established at this college in April, 1917, an infantry unit of the Reserve Officers' Training Corps. Following the World War and an act of Congress, July 19, 1918, the Reserve Officers' Training Corps has been in operation under the regulation of the War Department, administered by the president of the college and the professor of military science and tactics. Beginning with the fall term, 1920–21, the infantry unit of the Reserve Officers' Training Corps was converted into a cavalry unit.

The primary object of the Reserve Officers' Training Corps is to provide systematic military training at civil educational institutions, for the ultimate purpose of qualifying selected students of such institutions as reserve officers in the military forces of the United States. It is intended to attain this object during the time the students are pursuing their general or professional studies, with the least practicable interference with their civil careers, by employing methods designed to fit men physically, mentally, and morally for pursuits of peace as well as war.

The course for cavalry units of the Reserve Officers' Training Corps includes theoretical and practical instruction in all phases of cavalry work, so distributed over the four-year college course as to qualify students at the end of the freshman year as privates of cavalry, at the end of the sophomore year as non-commissioned officers of cavalry, and upon graduation as reserve officers. The instruction in this department covers cavalry drill, cavalry weapons — rifle, pistol, machine rifle, and machine gun — map reading, minor tactics, equitation, etc. The course in equitation includes cross-country riding and jumping. Forty per cent of the course is classroom work. All practical instruction is out of doors.

All male candidates for a degree in the four-year course must take at least three hours a week of military training for two years. Students who are approved by the president and the professor of military science and tactics may take the

advanced course in their junior and senior years if they so elect. The advanced course consists of at least five hours per week and a summer camp of about six weeks during the summer vacation between the junior and senior years. Students taking this course are paid by the Federal Government at a rate to be fixed by the Secretary of War, not to exceed the value of the army ration. The rate now is twenty-six cents per diem amounting for the two years to $140.40 to which should be added pay at camp of $27.93 making a cash value of $168.33. Students are required to equip themselves with riding boots but remainder of uniform is furnished by the college and becomes the property of the student upon graduation. Students graduating in the advanced course are eligible for commissions in the Officers' Reserve Corps, but are not required to accept such commissions if offered.

Uniforms for freshmen and sophomores are supplied by the college without cost except for shoes. A deposit of $18.00 is required to pay for shoes and insure return of other parts of uniform. The uniforms for the juniors and seniors (advanced course) are similar to U. S. army officers' uniforms tailor-made for the individual student. A deposit of thirty dollars for this uniform is required at the beginning of the junior year. The student is reimbursed through the allowances for clothing and rations.

Required Courses.

1. **I.** 2. **II.** For freshmen Theoretical and practical instruction in courtesy and discipline, rifle marksmanship, hygiene and first aid, dismounted drill, and musketry.

3 scheduled hours, credit, 2.
ARMY INSTRUCTORS.

25. **I.** 26. **II.** For sophomores. Theoretical and practical instruction in leadership, riding, drill, saber, machine rifle and pistol, and employment of cavalry.

3 scheduled hours, credit, 2.
ARMY INSTRUCTORS.

Elective Courses.

51. **I.** 52. **II.** For juniors. Cavalry drill and riding, selection and care of horses, pistol marksmanship, machine guns, map reading, map making, jumping, and employment of cavalry.

5 scheduled hours, credit, 3.
ARMY INSTRUCTORS.

75. **I.** 76. **II.** For seniors. Military law, history, correspondence and records, engineering (bridges and explosives), cavalry drill, leadership and command, riding, mounted sports, competitions, horse-show preparation and management, cross-country riding, and employment of cavalry.

5 scheduled hours, credit, 3.
ARMY INSTRUCTORS.

The Graduate School

F. J. Sievers, *Director.*

Graduate courses leading to advanced degrees have been available at the college practically since its establishment. At the beginning these courses leading to the degrees of master of science and doctor of philosophy were confined almost entirely to the offerings in the field of science. Since then the work has expanded until now a major toward either degree may be selected in any of the following subjects:

Agricultural Economics
Agronomy
Bacteriology
Botany
Chemistry
Entomology
Pomology
Poultry Science
Sociology

The following departments offer major work toward a master of science degree only:

Animal Husbandry
Dairy Industry
Education
Floriculture
Home Economics
Horticultural Manufactures

The degree of master of landscape architecture is granted to students completing the two years' graduate work offered by the department of landscape architecture; while students taking the equivalent of one year's graduate work in that major may be granted the degree of bachelor of landscape architecture.

Several other departments in the institution, while not regularly organized for major work in the graduate school, do, nevertheless, offer courses which may be selected for minor credit. These are:

Economics
English
French
Forestry
Geology
German
History
Landscape Architecture
Mathematics
Physical Education
Physics
Physiology
Veterinary Science
Zoölogy

The general requirements of the graduate school regarding entrance, residence, credits, tuition, fees, etc., together with specific information concerning details of interest to prospective students are set down in a separate bulletin which may be obtained upon request to the Director's Office.

The Summer School

For twenty-seven years the college has conducted a summer session, starting at first with a four-weeks' program consisting largely of teacher training and adult courses in nature study, vegetable gardening, fruit growing, poultry raising, and ornamental gardening, all organized without reference to credits or degree. Gradually the emphasis on such work changed and the need for more professional courses of college grade has resulted since 1924 in a six-weeks' session offering a well-balanced program of credit courses. These are arranged to assist (1) superintendents, principals, and teachers, connected with high or elementary schools who desire advanced instruction either with or without relation to academic credits; (2) classroom teachers who seek to prepare themselves more effectively in their special studies; (3) college undergraduates who wish to satisfy deficiencies or secure courses not otherwise available; and (4) any adult person who finds courses of special interest and aid for leisure or livelihood.

In addition to the full session courses of college grade a number of shorter courses, one or two weeks, are offered to enable citizens of the state to secure training in practical agriculture and horticulture, and in the special phases of homemaking. Fees and living expenses are very moderate so that many people arrange their vacation periods to include some sections of the summer session.

A carefully-planned program of entertainment including instruction in such sports as tennis, badminton, and archery, with hiking and picnics, swimming and golf, provides recreation for all.

Admission.

There are no formal examinations for admission to the summer school. Undergraduate students are admitted to such courses as their preparation justifies. Admission to the graduate school will be granted to graduates of the Massachusetts State College and to the graduates of other institutions having substantially equivalent requirements for the bachelor's degree.

The following courses were offered in the 1935 session, and illustrate the type of program at present available.

College Credit Courses (July 1 — August 9, 1935

Experimental Psychology
Educational Psychology
Introduction to Philosophy
Principles and Methods of Teaching
Secondary Education
Mental Hygiene
Problems in Vocational Teaching
Principles of Vocational Education
American Literature
Ibsen and the Contemporary Drama
Dramatic Production
The One-Act Play
The Effective Spoken Word
Community Recreation Leadership
General Biology
Genetics and Eugenics
General Inorganic Chemistry
Garden Materials
Floral Arrangement
Fundamentals of Nutrition
Public Healtb
Business Law
Principles of Economics
Current Economic Problems
European History Since 1870
Spanish American History
Introduction to Sociology

Utility Courses (Non-credit).

Food Preservation
Birds
Insects
Plants
Amphibians and Reptiles
Mammals
Fishes
Clothing Construction
Home Carpentry and Furniture Finishing
Home Ground Plantings
Floral Arrangement
Elements of Applied Forestry
Special Dramatic Problems of the Club and Community Leaders

For further information, write or apply to Roland H. Verbeck, Director of Short Courses, Massachusetts State College, Amherst, Mass.

For information concerning graduate work in the summer school, write or apply to Fred J. Sievers, Director of the Graduate School, Massachusetts State College, Amherst, Mass.

Non-Degree Courses of Instruction

THE STOCKBRIDGE SCHOOL OF AGRICULTURE.

General Information.

The Stockbridge School of Agriculture was organized in 1918, under the name of "The Two-Year Course in Practical Agriculture," for the purpose of meeting the demand for a short course in agriculture which might be taken by students who could not satisfy college entrance requirements or who, for one reason or another, were unable to take the college course. The name was changed to the present one by vote of the trustees of the college in 1928.

This course trains men and women for the practice of farming or associated agricultural industries. Graduation from it does not fulfill the requirements for entrance into the degree course nor are credits earned during the course transferable toward credit for a degree.

As the course is now organized, students may specialize in any one of eight vocations: animal husbandry, dairy manufactures, floriculture, horticulture, fruit growing, poultry husbandry, vegetable gardening or wild life management. Specialization in a vocation does not prevent students from securing a general working knowledge of other subjects. The Stockbridge School will appeal not only to young men and women, but also to men and women of mature years and practical experience who wish to know more about the business of farming or associated agricultural industries. The School is not intended for students enrolled in a high school; such students should complete their high school course before seeking admission to this school.

Entrance Requirements.

Applicants for admission must be at least seventeen years of age and must have completed at least an elementary school course or its equivalent. Before being enrolled for the work of the second year, students must have completed six-months' practical experience approved by the supervisor of placement training.

Students who are already enrolled in high schools and who wish to enter this school before the completion of the high school course should bring a statement, either from the principal of the high school or from the parent or guardian, requesting enrollment.

Instruction.

The instruction is given by the regular faculty by means of classroom teaching, laboratory exercises, and practical work. The work of the classroom is supplemented by demonstration work in the laboratory, dairy room, greenhouse, and stables, and by a six months' period of farm placement training during the spring and summer following the second semester (eight weeks only) of resident instruction. The course is designed to offer plain, practical, direct information, and to establish the underlying reasons for, as well as methods employed in, the various operations.

Credit and Diploma.

In order to obtain a diploma, the student must complete satisfactorily all the work required in the vocational course which he has selected. This course consists of six months of class and laboratory work from October to April supplemented by six months of practical experience gained between the first and second years of resident instruction and subject to the approval of the supervisor of placement training.

No student failing to meet the requirements of his six months' summer training can be enrolled for the second year, since the placement training is an absolutely necessary prerequisite.

Graduates of county schools of agriculture or of agricultural departments of high schools may complete the course for a diploma in one year if they are recommended by the director of the county school or by the instructor in charge of the department of agriculture in the high school.

Special Catalog.

For a complete catalog of the Stockbridge School of Agriculture, containing an application blank, write or apply to Director Roland H. Verbeck, Massachusetts State College, Amherst, Mass.

THE WINTER SCHOOL.

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(3) Ten Weeks' Practical and Scientific Course for Florists. January 6 to March 13.
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(5) One Week Course in Milk and Cream Testing; Analyzing and Inspecting Milk Products. January 20 to January 25.
(6) One Week Course in Milk Plant Operation and Manufacture of Surplus Milk Products. January 27 to February 1.
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Poultry Course	9.00	5.00	1.50
Dairy Bacteriology Course	2.00	2.00	None
Dairy Courses, each	2.00	2.00	None
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Professor of Agriculture, Emeritus.

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Professor of Entomology, Emeritus.

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Instructor in Phys cal Education.

LUTHER BANTA, B.S., ... Stockbridge Hall—7 Allen St.
Assistant Professor of Poultry Husbandry.

ROLLIN H. BARRETT, M.S., ... Stockbridge Hall—45 East Pleasant St.
Assistant Professor of Farm Management.

EVELYN A. BEAMAN, M.S., ... Stockbridge Hall—68 Lincoln Ave.
Instructor in English.

ETHEL W. BLATCHFORD, B.S., ... Drill Hall—27 East Pleasant St.
Instructor in Physical Education.

LYLE L. BLUNDELL, B.S., ... Wilder Hall—5 Northampton Road
Professor of Horticulture.

HAROLD D. BOUTELLE, B.S., Ch.E., . Mathematics Building—29 Lincoln Ave.
Instructor in Mathematics.

LEON A. BRADLEY, Ph.D., ... Marshall Laboratory—7 Cosby Ave.
Professor of Bacteriology.

LAWRENCE E. BRIGGS, B.S., . . . Physical Education Building—3 Allen St.
Assistant Professor of Physical Education.

MILDRED BRIGGS, M.S., ... Stockbridge Hall—6 Nutting Ave.
Assistant Professor of Home Economics.

THEODORE C. CALDWELL, Ph.D., ... Stockbridge Hall—4 Chestnut St.
Assistant Professor of History and Sociology.

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Instructor in History.

JOSEPH S. CHAMBERLAIN, Ph.D., . Goessmann Laboratory—Mount Pleasant
Goessmann Professor of Chemistry.

WALTER W. CHENOWETH, M.S.,Horticultural Manufactures Lab.—North Amherst
Professor of Horticultural Manufactures and Head of Department.

ORTON L. CLARK, B.S., ... Clark Hall—12 College St.
Associate Professor of Botany.

LEO B. CONNER . . . . . Drill Hall—59 Lincoln Ave.
Captain, Cavalry, U.S.A., Assistant Professor of Military Science and Tactics.

Mrs. SARA M. COOLIDGE, M.S., . . . South College—The Homestead
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Professor of Insect Morphology.

JAMES D. CURTIS, M.F., ... French Hall—9 Mount Pleasant
Instructor in Forestry.

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Horticultural Manufactures Lab.—103 Butterfield Ter.
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Assistant Professor of Botany.

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Assistant Professor of Agronomy.

WALTER S. EISENMENGER, Ph.D., . . . Stockbridge Hall—24 Dana St.
Research Professor of Agronomy and Head of Department.

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Instructor in German.

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Professor of Dairy Industry and Head of Department.

ARTHUR P. FRENCH, M.S., ... French Hall—North Amherst
Assistant Professor of Pomology.

GEORGE E. GAGE, Ph.D., ... Marshall Laboratory—Lincoln Block
Professor of Bacteriology and Physiology and Head of Department.

PHILIP L. GAMBLE, Ph.D., ... South College—8 Lincoln Ave.
Assistant Professor of Economics.

MARY E. M. GARVEY, B.S., . . Marshall Laboratory—29 South Prospect St.
Assistant Professor of Bacteriology.

GUY V. GLATFELTER, M.S., . . . South College—29 Northampton Road
Assistant Professor of Animal Husbandry and Placement Officer.

HARRY N. GLICK, Ph.D., . . . Stockbridge Hall—6 North Hadley Road
Professor of Psychology.

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Assistant Professor of French and Music.

MAXWELL H. GOLDBERG, Ph.D., . . . Stockbridge Hall—26 Lincoln Ave.
Assistant Professor of English.

CLARENCE E. GORDON, Ph.D., ... Fernald Hall—38 Lincoln Ave.
Professor of Zoölogy and Geology; Head of Department of Entomology, Zoölogy and Geology; Head of Division of Physical and Biological Sciences.

HAROLD M. GORE, B.S., . Physical Education Building—4 North Hadley Road
Professor of Physical Education and Head of Department of Physical Education for Men.

JOHN C. GRAHAM, B.S.Agr., ... Stockbridge Hall—68 Lincoln Ave.
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Instructor in Vegetable Gardening.

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Professor of Pomology; Head of Division of Horticulture.

JOHN H. VONDELL . . . . . Stockbridge Hall—24 Fearing St.
Instructor in Poultry Husbandry and Foreman Poultry Plant.

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Assistant Professor of Zoölogy.

HERBERT E. WATKINS, A.B., ... Drill Hall—Shays St.
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Professor of Landscape Architecture and Head of Department.
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Library Assistant.
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DEPARTMENT ASSISTANTS.

FREDERICK N. ANDREWS, B.S., ... Stockbridge Hall—17 Kellogg Ave.
Institutional Fellow, Department of Animal Husbandry.
ROLAND F. BECKER, B.S., ... Stockbridge Hall—3 McClellan St.
Graduate Assistant, Department of Education.
MARGUERITE E. BICKNELL, B.A., ... South College—37 Whitney St.
Graduate Assistant, Department of Economics.

Amedeo Bondi, B.S., ... Marshall Laboratory—5 Fearing St.
Graduate Assistant, Department of Bacteriology and Physiology.

Cornelius K. Cain, B.S., . . . Goessmann Laboratory—56 Main St.
Graduate Assistant, Department of Chemistry.

John Calvi, M.S., ... Goessmann Laboratory—Colonial Inn
Graduate Assistant, Department of Chemistry.

Carl F. Clancy, B.S., ... Marshall Laboratory—4 Chestnut St.
Graduate Assistant, Department of Bacteriology and Physiology.

G. Chapman Crooks, M.S., . . . Goessmann Laboratory—1 Cottage St.
Institutional Fellow, Department of Chemistry.

Hans Henning Freiherr von Dobeneck, Stockbridge Hall—7 Mount Pleasant
Graduate Assistant, Department of Agronomy.

Dorothy F. Doran, B.S., ... Stockbridge Hall—18 Nutting Ave.
Graduate Assistant, Department of Home Economics.

Clyde W. Dow, B.L.I., ... Stockbridge Hall—54 Lincoln Ave.
Graduate Assistant, Department of Languages and Literature.

Peter Dunn, ... Physical Education Building—83 Main St.
Department Assistant, Department of Physical Education.

Alice I. Dwight, B.S., ... Clark Hall—18 Nutting Ave.
Institutional Fellow, Department of Botany.

John N. Everson, B.S., ... Stockbridge Hall—North Amherst
Institutional Fellow, Department of Agronomy.

Chester L. French, B.S., . . . Goessmann Laboratory—North College
Graduate Assistant, Department of Chemistry.

Rudolph Frundt, A.B., . . . Goessmann Laboratory—Mount Pleasant
Graduate Assistant, Department of Chemistry.

Carl S. Gerlack, B.S., ... Wilder Hall—64 Lincoln Ave.
Graduate Assistant, Department of Landscape Architecture.

Miriam Hatch, B.S., . . Physical Education Building—North Amherst
Institutional Fellow, Department of Physical Education.

Walter H. Hodge, A.B., ... Clark Hall—5 Fearing St.
Graduate Assistant, Department of Botany.

Elfriede Klaucke, B.S., ... Stockbridge Hall—56 Pleasant St.
Graduate Assistant, Department of Agronomy.

Karol J. Kucinsky, B.S., . . . Stockbridge Hall—15 North East St.
Institutional Fellow, Department of Agronomy.

C. Collis Lyle, M.A., ... Stockbridge Hall—Pleasant St.
Graduate Assistant, Department of Languages and Literature.

Alexander A. Lucey, B.S., . Horticultural Manufactures Lab.—Chestnut St.
Graduate Assistant, Department of History and Sociology.

Oscar Margolin, B.S., ... Flint Laboratory—35 Lincoln Ave.
Institutional Fellow, Department of Dairy Industry.

Joseph Miller, B.S., . . Horticultural Manufactures Lab.—Cosby Ave.
Institutional Fellow, Department of Horticultural Manufactures.

Carroll P. Moore, B.S., . . Stockbridge Hall—32 North Prospect St.
Graduate Assistant, Department of Education.

David C. Mountain, B.S., . Physical Education Building—42 Lincoln Ave.
Graduate Assistant, Department of Physical Education.

Charles E. Meyers, B.S., ... Wilder Hall—5 Hillcrest Place
Graduate Assistant, Department of Landscape Architecture.

Alfred N. Newton, B.S., . . Goessmann Laboratory—81 Pleasant St.
Graduate Assistant, Department of Chemistry.

Julius Novick, B.S., . Horticultural Manufactures Lab.—56 Pleasant St.
Institutional Fellow, Department of Horticultural Manufactures.

Philip Robinson, B.S., ... Stockbridge Hall—9 Phillips St.
Graduate Assistant, Department of Education.

Vernon K. Watson, M.S. . . Marshall Laboratory—5 East Pleasant St.
Institutional Fellow, Department of Bacteriology and Physiology.

Inez W. Williams, M.S., ... Fernald Hall—87 Pleasant St.
Graduate Assistant, Department of Entomology.

THE EXPERIMENT STATION STAFF.

FRED J. SIEVERS, M.S., . . . East Experiment Station—35 Fearing St.
Director.
JOHN G. ARCHIBALD, M.S., . . Goessmann Laboratory—North Amherst
Assistant Research Professor of Animal Husbandry.
JOHN S. BAILEY, M.S., ... French Hall—North Amherst
Assistant Research Professor of Pomology.
WILLIAM B. BECKER, B.S., ... Fernald Hall—Lincoln Block
Entomologist, Elm Tree Disease Control.
ARTHUR I. BOURNE, B.A., ... Fernald Hall—12 East Pleasant St.
Research Professor of Entomology.
CHARLES R. CREEK, M.S.A., ... Stockbridge Hall—21 Main St.
Assistant Research Professor of Agricultural Economics and Farm Management.
PAUL W. DEMPSEY, B.S., ... Waltham Field Station—Waltham
Assistant Research Professor of Horticulture.
WILLIAM L. DORAN, M.S., ... Clark Hall—26 Lincoln Ave.
Research Professor of Botany.
WALTER S. EISENMENGER, Ph.D., . . . Stockbridge Hall—24 Dana St.
Research Professor of Agronomy and Head of Department.
CARL R. FELLERS, Ph.D., . Horticultural Manufactures Lab.—16 Fearing St.
Research Professor of Horticultural Manufactures.
RALPH L. FRANCE, M.S., ... Marshall Laboratory—Mount Pleasant
Assistant Research Professor of Bacteriology.
HENRY J. FRANKLIN, Ph.D., ... Cranberry Station—East Wareham
Research Professor; Head of Cranberry Station.
JAMES E. FULLER, Ph.D., ... Marshall Laboratory—Farview Way
Assistant Research Professor of Bacteriology.
EDWIN F. GASKILL, B.S., . . East Experiment Station—North Pleasant St.
Assistant to the Director.
CHARLES S. GIBBS, D.V.M., Ph.D., . Paige Laboratory—117 Butterfield Ter.
Research Professor of Veterinary Science.
GEORGE GRAVES, B.S., ... Waltham Field Station—Waltham
Assistant Research Professor of Nursery Culture.
EMIL F. GUBA, Ph.D., ... Waltham Field Station—Waltham
Assistant Research Professor of Botany.
CHRISTIAN I. GUNNESS, B.S., . . . Stockbridge Hall—105 Butterfield Ter.
Meteorologist and Head of Department of Agricultural Engineering.
FRANK A. HAYS, Ph.D., ... Stockbridge Hall—Oneacre
Research Professor of Poultry Husbandry.
EDWARD B. HOLLAND, Ph.D., . Goessmann Laboratory—28 North Prospect St.
Research Professor of Chemistry.
CARLETON P. JONES, M.S., . . Goessmann Laboratory—8 Nutting Ave.
Assistant Research Professor of Chemistry.
LINUS H. JONES, Ph.D., ... Clark Hall—1 Allen St.
Assistant Research Professor of Botany.
RAY M. KOON, M.S., ... Waltham Field Station—Waltham
Research Professor of Horticulture; Head of Waltham Field Station.
MALCOLM A. MCKENZIE, Ph.D., ... Clark Hall—North Amherst
Pathologist, Elm Tree Disease Control.
†RONALD L. MIGHELL, M.S., ... Stockbridge Hall—20 Spring St.
Assistant Research Professor of Farm Management.
HELEN S. MITCHELL, Ph.D., . . East Experiment Station—30 Lincoln Ave.
Research Professor of Home Economics.
FRED W. MORSE, M.S., ... Goessmann Laboratory—40 Pleasant St.
Research Professor of Chemistry.
WILLIAM S. MUELLER, M.S., ... Flint Laboratory—13 Fearing St.
Assistant Research Professor of Dairying.
WALTER S. RITCHIE, Ph.D., . . . Goessmann Laboratory—12 Taylor St.
Professor of Chemistry and Head of Department.

† On leave of absence.

DAVID ROZMAN, Ph.D., ... South College—72 Main St.
Assistant Research Professor of Economics.

JACOB K. SHAW, Ph.D., ... French Hall—5 Farview Way
Research Professor of Pomology.

WARREN D. WHITCOMB, B.S., ... Waltham Field Station—Waltham
Research Professor of Entomology.

HAROLD E. WHITE, M.S., ... Waltham Field Station—Waltham
Assistant Research Professor of Floriculture.

ROBERT E. YOUNG, M.S., ... Waltham Field Station—Waltham
Assistant Research Professor of Vegetable Gardening.

OTHER EXPERIMENT STATION OFFICERS.

HARRY L. ALLEN . . . . . West Experiment Station—89 Main St.
Laboratory Assistant in Chemistry.

ALYN S. BALL, ... Clark Hall—94 Main St.
Laboratory Assistant in Botany.

DONALD A. BEAN, B.S., . . Horticultural Manufactures Lab.—Hatch Annex
Research Fellow, Department of Horticultural Manufactures.

EMMETT BENNETT, M.S., ... Goessmann Laboratory—20 Amity St.
Research Assistant in Chemistry.

ROBERT E. BUCK, M.S., . . Horticultural Manufactures Lab.—Hatch Annex
Research Fellow, Department of Horticultural Manufactures.

Mrs. LUCIA G. CHURCH, . . . East Experiment Station—North Amherst
Secretary to the Director.

JOHN A. CLAGUE, Ph.D., . . Horticultural Manufactures Lab.—15 Gray St.
Research Assistant in Horticultural Manufactures.

Mrs. GLADYS COOK, B.S., . . . East Experiment Station—30 Lincoln Ave.
Research Fellow, Department of Home Economics Nutrition.

J. ELIZABETH DONLEY, M.S., ... Stockbridge Hall—4 Chestnut St.
Research Assistant in Agricultural Economics and Farm Management.

EDWARD B. DONNELLY, ... Waltham Field Station—Waltham
Technical Assistant in Floriculture.

WILLIAM B. ESSELEN, Jr., B.S., Horticultural Manufactures Lab.—Q.T.V. House
Research Fellow, Department of Horticultural Manufactures.

F. ETHEL FELTON, B.A., . . . East Experiment Station—The Davenport
Editorial Assistant.

CONSTANTINE J. GILGUT, M.S., . . . Waltham Field Station—Waltham
Technical Assistant in Horticulture.

MARY C. HUGHES, ... French Hall—30 Cottage St.
Laboratory Assistant in Pomology.

ARTHUR S. LEVINE, B.S., . . Horticultural Manufactures Lab.—Hatch Annex
Research Fellow, Department of Horticultural Manufactures.

JOHN W. LOCKE, ... Tillson Farm
Poultry Plant Foreman.

WALTER A. MACLINN, M.S., . Horticultural Manufactures Lab.—Hatch Annex
Research Fellow, Department of Horticultural Manufactures.

OREANA A. MERRIAM, B.S., . . East Experiment Station—34 Lincoln Ave.
Laboratory Assistant in Home Economics.

GLADYS I. MINER, ... Clark Hall—South Deerfield
Herbarium Curator.

LEONARD R. PARKINSON, ... Nutrition Laboratory
Technical Assistant in Animal Husbandry.

RUBY SANBORN, A.B., ... Stockbridge Hall—111 Butterfield Ter.
Research Assistant in Poultry Husbandry.

RUTH E. SHERBURNE, B.S., ... South College—Oneacre
Research Assistant in Economics.

MOSES E. SNELL, ... Brooks Farm
Technical Assistant in Agronomy.

LAWRENCE SOUTHWICK, B.S., ... French Hall—21 Pleasant St.
Technical Assistant in Pomology.

HAROLD A. WILSON, ... Waltham Field Station—Waltham
Foreman, Waltham Field Station.

LABORATORY AND CONTROL SERVICE STAFF.

KENNETH L. BULLIS, D.V.M., . . . Paige Laboratory—120 Pleasant St.
Assistant Veterinary Pathologist.
H. ROBERT DEROSE, M.S., . . West Experiment Station—Farview Way
Assistant Chemist.
OLIVER S. FLINT, B.S., ... Paige Laboratory—Cosby Ave.
Assistant Research Professor.
HENRI D. HASKINS, B.S., . . West Experiment Station—8 South Prospect St.
Chief of Laboratory, Fertilizer Control.
FREDERICK A. MCLAUGHLIN, B.S., . West Experiment Station—4 Nutting Ave.
Assistant Research Professor, Seed Control.
PHILIP H. SMITH, M.S., . . . West Experiment Station—102 Main St.
Chief of Laboratory, Feed Control.
HENRY VAN ROEKEL, D.V.M., Ph.D., . . Paige Laboratory—19 Hallock St.
Chief of Laboratory, Poultry Disease Control.
OLIVE M. HOEFLE, B.S., . . . West Experiment Station—The Davenport
Technical Assistant, Seed Control.
MIRIAM K. CLARKE, M.S., ... Paige Laboratory—87 Pleasant St.
Laboratory Assistant.
JAMES T. HOWARD, . . . West Experiment Station—North Pleasant St.
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JOHN W. KUZMESKI, B.S., . . West Experiment Station—Pelham Road
Junior Chemist.
ALBERT F. SPELMAN, B.S., . . West Experiment Station—15 Fearing St.
Junior Chemist.
FELICIA ZIMNOSKI, ... Paige Laboratory—Sunderland
Laboratory Assistant.

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ELLSWORTH W. BELL, M.S., ... Stockbridge Hall—11 Cottage St.
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Home Demonstration Agent at Large.[1]
TENA BISHOP, B.S., ... South College—8 Triangle St.
Assistant State Club Leader.[2]
ORAN C. BOYD, Ph.D., ... Clark Hall—8 Hallock St.
Extension Plant Pathologist.[1]
FAYETTE H. BRANCH, B.S., ... Stockbridge Hall—8 Dana St.
Extension Economist, Farm Management.[1]
JAMES W. BURKE, ... South College—24 Lessey St.
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WILLIAM R. COLE, . . . Horticultural Manufactures Lab.—33 Fearing St.
Extension Specialist, Horticultural Manufactures.[1]
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Assistant Extension Horticulturist.[2]
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Extension Nutritionist.[1]

[1] Ranks as Professor.
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Assistant State Club Leader.[2]

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Extension Economist, Home Management.[1]

Mrs. ANNETTE T. HERR, A.M., ... South College—62 Pleasant St.
State Home Demonstration Leader.[1]

GAY T. KLEIN, M.S., ... Stockbridge Hall—6 Kendrick Place
Extension Poultry Husbandman.[1]

HARLEY A. LELAND, B.S.Agr., ... South College—50 Sunset Ave.
Assistant State Club Leader.[2]

WILLIAM P. B. LOCKWOOD, M.S., ... 51 Cornhill, Boston
Extension Specialist in Dairying.[1]

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Extension Specialist, Child Development.[1]

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Extension Specialist, Farm Management.[1]

EARLE H. NODINE, M.Ed., ... South College—6 Dana St.
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Social Sciences: Mackimmie, Cance, Welles, Rand, Glick, Cutler.
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Physical Education: C. S. Hicks, Gore, Radcliffe, Taube, Derby, L. E. Briggs.

DEGREES CONFERRED—1935

Doctor of Philosophy (Ph.D.)

Clague, John A., B.S., University of Washington, M.S., Massachusetts State College . . . . . Amherst
Griffiths, Francis P., B.S., University of Washington, M.S., Massachusetts State College . . . . . North Amherst
Hamilton, William B., B.S.A., Macdonald College . . . . . Lexington, Ky.
Isham, Paul D., B.S., M.S., Massachusetts State College . . . . . Amherst
Spaulding, Major F., B.S.A., A. and T. College of North Carolina, B.S., M.S., Cornell University . . . . . Greensboro, N. C.
Stuart, Wallace W., B.S., Massachusetts State College . . . . . Littleton Common

Master of Science (M.S.)

Anderson, Carrolle E., B.S., Massachusetts State College . . . . . Ashfield
Barber, Elmer E., B.S., Massachusetts State College . . . . . Jamaica Plain
Beaman, Evelyn A., B.S., Massachusetts State College . . . . . Leverett
Bosworth, William E., B.S., Massachusetts State College . . . . . Holyoke
Conway, William S., A.B., College of the Holy Cross . . . . . Springfield
Doerpholz, Eunice M., B.S., Massachusetts State College . . . . . Holyoke
Donley, J. Elizabeth, A.B., Mount Holyoke College . . . . . Amherst
Esselen, William B., B.S., Massachusetts State College . . . . . Millis
Foley, William J., A.B., College of the Holy Cross . . . . . Springfield
Germany, Claude B., A.B., Harvard University . . . . . Athol
Gurney, Ashley B., B.S., Massachusetts State College . . . . . Cummington
Hanson, John R., B.S., Massachusetts State College . . . . . Waltham
Hunt, J. Franklin, B.S., University of Pennsylvania . . . . . Portland, Maine
Isgur, Benjamin, B.S., Massachusetts State College . . . . . Dorchester
Keller, Vernet S., B.S., Middlebury College . . . . . Hatfield
Kimball, Evelyn D., B.S., Middlebury College . . . . . Amherst
Lohan, Francis M., A.B., St. Michael's College . . . . . Springfield
Maclinn, Walter A., B.S., Massachusetts State College . . . . . Amherst
Minarik, Charles E., B.S., Massachusetts State College . . . . . Westfield
Murphy, Charles E., A.B., College of the Holy Cross . . . . . Pittsfield
Onsdorff, Thomas, B.S., Oregon State College . . . . . Corvallis, Ore.
Parker, Ruth L., B.S., Framingham Teachers' College . . . . . West Springfield
Snow, Russell L., B.S., Massachusetts State College . . . . . Arlington
Sokol, Alexander K., B.S.E., Fitchburg Teachers' College . . . . . Greenfield
Spaulding, Leora J., B.S., A. and T. College of North Carolina . . . . . Amherst
Syrocki, Adam V., B.S., Connecticut State College . . . . . New Britain, Conn.
Taylor, Marion R., B.S., Massachusetts State College . . . . . Greenfield
Watson, Vernon K., B.S., Massachusetts State College . . . . . Amherst

Bachelor of Landscape Architecture (B.L.A.)

Fisher, Homer S., B.S., Alabama Polytechnic Institute . . . . . Huntsville, Ala.

Bachelor of Science (B.S.)

Abbott, Robert West . . . . . Falmouth
Allen, Robert John, Jr. . . . . Worcester
Andrews, Frederick Newcomb . . . . . South Weymouth
Arenberg, David Lewis . . . . . Rochester
Arnold, Stuart Aborn . . . . . Rehoboth
Ashley, Madelyn Gertrude . . . . . Greenfield
Avery, Ruth Anna . . . . . Pocasset
Bailey, John Lewis . . . . . Kingston
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Bartlett, Dorothy Eleanor . . . . . Chicopee Falls
Bartlett, Helen Elnora . . . . . Framingham
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Beebe, Helen Elizabeth . . . . . Monson
Bell, Vernon Adam Veith . . . . . Amherst
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Blackburn, Roger Tait . . . . . Stoneham
Blake, Lamont Vincent . . . . . Springfield
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Bozian, George . . . . . Fall River
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Pelissier, Ruth Elizabeth	Hadley
Perry, Elizabeth Cushman	Watertown
Pollin, Leo	Springfield
Prentiss, Edward LeRoy	Upton
Putnam, Shirley Dorothy	Springfield
Ramsdell, Albert Bradbury, Jr.	Palmer
Riseman, Henry Frank	Winthrop
Robinson, Phillip	Revere
Rod, Sylvia Lillian	Becket
Roper, Harriet Ann	Westminster
Salamoff, Sidney Arthur	Roxbury
Sargent, Janet Christie	Auburndale
Sargent, Ruth Wentworth	Wollaston
Savaria, Thomas Joseph	Ware
Schaffner, Paul Webster	Dover
Schlaefer, William Valentine	Englewood, N. Y.
Schreiter, Ralph William	Walpole
Schubert, Bernice Giduz	Boston
Scott, William Arthur	Bloomfield, Conn.
Senecal, Willard Henry	Williamsburg
Shapiro, Maurice	North Adams
Sharff, Hyman	Chelsea
Shattuck, Rosamond Myrtle	East Pepperell
Shaw, Glenn Frederick	Palmer
Siira, John Raymond	Centerville
Sleep, Charlotte Fogwell	Fitchburg
Smith, Marion Estelle	Greenfield
Snow, Samuel Peaslee	West Roxbury
Steadman, Kenneth Austin	Needham
Stepat, Walter	Braintree
Stevens, Nelson Pierce	Haverhill
Stewart, Donald Mitchell	Arlington
Stone, Philip Carlton	Athol
Sumner, James Ellsworth	Quincy
Tannebaum, Harold Samuel	Amherst
Thatcher, Eleanor Charlotte	Athol
Thayer, Carrol Edwin	Williamsburg
Thornton, Edna	Amherst
Tinti, Corada Sarah	North Agawam
Tirrell, Wilbur Greene	South Weymouth
Tosches, Joseph John	Milford
Tramposch, Emil John	Huntington Station, N. Y.
Valentine, James Jackson	Framingham Center
Veerling, John Peter	East Weymouth
Welcker, Merrill Louis, Jr.	Holyoke
Whitney, Joseph Adolphus	Ludlow
Wihry, Benjamin Joseph	Haverhill
Winokur, Louis Isaac	Dorchester
Wood, Paul Owen	Amherst
Wood, Robert Holman	West Upton
Zucker, Dante	Holyoke

Bachelor of Vocational Agriculture (B.V.A.)

Tani, Sulo John	Worcester

REGISTRATION, 1935-36.

GRADUATE STUDENTS.

Superior figures indicate: [1] Enrolled during academic year, 1934–35.
[2] Enrolled in Summer School, 1935.
[3] Enrolled during first semester, 1935–36.

Amberlock, Joseph P.[3] Economics . . . . . Westfield
B.S., Northeastern University.
Anderson, Carrolle E.[1] Botany . . . . . Ashfield
B.S., M.S., Massachusetts State College.
Andrews, Frederick N.[3] Animal Husbandry . . . . . South Weymouth
B.S., Massachusetts State College.
Andrews, Henry N.[1] Botany . . . . . Melrose
B.S., Massachusetts Institute of Technology.
Appleton, Lloyd O.[3] Education . . . . . Springfield
B.A., Cornell College.
Atkins, Marjorie M.[2] English . . . . . Amherst
A.B., Wheaton College.
Barber, Elmer E.[1] Education . . . . . Jamaica Plain
B.S., M.S., Massachusetts State College.
Barnicle, Harry A.[1 3] Education . . . . . Hartford, Conn.
B.S.E., Fitchburg State Teachers College.
Beaman, Evelyn A.[1] English . . . . . Leverett
B.S., M.S., Massachusetts State College.
Bean, Donald A.[3] Horticultural Manufactures . . . . . Newburyport
B.S., in Ch.E., Northeastern University.
Becker, Roland F.[3] Education . . . . . Methuen
B.S., Massachusetts State College.
Becker, William B.[1 3] Entomology . . . . . Merrick, N. Y.
B.S., New York State College.
Bernique, George M.[3] Education . . . . . New Bedford
B.A., Assumption College.
Betts, Benjamin D.[1] Landscape Architecture . . . . . Amherst
B.S., Massachusetts State College.
Bicknell, Marguerite E.[1 3] Economics . . . . . Amherst
B.A., Smith College.
Bittinger, Richard.[2] Education . . . . . Springfield
B.S., Massachusetts State College.
Blais, Raymond[1] . . . . . Holyoke
A.B., College of the Holy Cross.
Bondi, Amedeo.[3] Bacteriology . . . . . Springfield
B.S., Connecticut State College.
Bosworth, William E.[1] Education . . . . . Holyoke
B.S., M.S., Massachusetts State College.
Brackley, Floyd E.[2] Education . . . . . Belchertown
B.S., Massachusetts State College.
Bresnick, Samuel.[3] Chemistry . . . . . Revere
B.S., Massachusetts State College
Briggs, Lawrence E.[1 3] Physical Education . . . . . Amherst
B.S., Massachusetts State College.
Broudy, Herman.[1 3] Entomology . . . . . Amherst
B.S., Pennsylvania State College.
M.S., Massachusetts State College.
Buck, Robert E.[1 3] Chemistry . . . . . Amherst
B.A., Cornell University
M.S., Massachusetts State College.
Buker, Wayne A.[1] Education . . . . . Shelburne Falls
A.B., Bates College.
Bush, Louis.[1] Education . . . . . Turners Falls
B.S., Massachusetts State College.
Cain, Cornelius K.[3] Chemistry . . . . . Owensboro, Ky.
B.S., University of Kentucky.
Calvi, John.[1 3] Chemistry . . . . . Athol
B.S., M.S., Massachusetts State College.
Cary, Marjorie Elizabeth.[3] . . . . . Lyonsville
B.S., Massachusetts State College.
Casey, Jeannette S.[2] Education . . . . . Holyoke
A.B., Vassar College.
Clague, John A.[1] Bacteriology . . . . . Amherst
B.S., University of Washington.
M.S., Ph.D., Massachusetts State College.
Clancy, Carl F.[1 3] Bacteriology . . . . . Dedham
B.S., Massachusetts State College.
Clancy, William J.[1 3] Education . . . . . Springfield
A.B., Rochester University.
Connell, Philip J.[1] Agricultural Economics . . . . . Springfield
B.S., Massachusetts State College.
Connor, Daniel J.[2] Education . . . . . South Hadley Falls
A.B., College of the Holy Cross.
Conroy, James A.[1 2 3] Education . . . . . Pittsfield
B.S., Georgetown University.
Conway, William S.[1] Horticultural Manufactures . . . . . Springfield
A.B., College of the Holy Cross.
M.S., Massachusetts State College.
Cook, Gladys M.[3] Home Economics . . . . . Brookville, Indiana
B.S., Battle Creek College.

Cooley, George A.[1] Education . . . . . Hathorne
B.S., Montana State College.
Cooley, Laura G.[3] Home Economics . . . . . Sunderland
B.S., Massachusetts State College.
Cooney, Bernardine J.[3] Education . . . . . Northampton
A.B., Smith College.
Cowing, Ulmont C.[1] Education . . . . . West Springfield
B.S., Colby College.
Creek, Charles R.[3] Agricultural Economics and Farm Management . . Amherst
B.S.A., M.S.A., Purdue University
Crooks, G. Chapman.[3] Chemistry . . . . . Amherst
A.B., Amherst College.
Cross, Chester E.[3] Botany . . . . . Onset
B.S., Massachusetts State College.
Cummings, Guy A.[3] Education . . . . . Ware
B.S., Worcester Polytechnic Institute.
Currie, Eugene K.[2 3] Education . . . . . Ashfield
A.B., Colby College.
Daniels, Charles H.[3] Entomology . . . . . Melrose
B.S., Massachusetts State College.
Davis, Arnold M.[1 2 3] Landscape Architecture . . . . . North Amherst
B.S., Massachusetts State College.
DeRose, H. R.[1 3] Agronomy . . . . . Amherst
B.S., M.S., Kansas State College.
Dickinson, L.S.[1 3] Horticulture . . . . . Amherst
B.S., Massachusetts State College.
Dobeneck, von, Henning Freiherr.[3] Agronomy . . . . . Munich, Germany
Technische Hochschule, Munchen.
Doerpholz, Eunice M.[1] Horticultural Manufactures . . . . . Holyoke
B.S., M.S., Massachusetts State College.
Donaghy, E. J.[1] Education . . . . . Jamaica Plain
B.S., Massachusetts State College.
Donley, J. Elizabeth.[1 3] Agricultural Economics . . . . . Amherst
A.B., Mount Holyoke College.
M.S., Massachusetts State College.
Doran, Dorothy F.[1 3] Home Economics . . . . . Springfield
B.S., Massachusetts State College.
Dow, Clyde W.[3] Education . . . . . Wakefield
B.L.I., Emerson College.
Drummond, Robert L.[1] Education . . . . . Cambridge
B.S., Massachusetts School of Art.
Durell, William D.[1] Landscape Architecture . . . . . Attleboro
B.S., Massachusetts State College.
Dwight, Alice I.[3] Botany . . . . . Griswoldville
B.S., Massachusetts State College.
Ellis, Catherine M.[2] Education . . . . . East Brewster
B.S., Massachusetts State College.
Esselen, William B.[1 3] Horticultural Manufactures . . . . . Millis
B.S., M.S., Massachusetts State College.
Everson, John N.[1 2 3] Agronomy . . . . . Amherst
B.S., Massachusetts State College.
Farrar, John B.[1] Education . . . . . East Weymouth
B.S., Massachusetts State College.
Fisher, Homer S.[1] Landscape Architecture . . . . . Huntsville, Alabama
B.S., Albama Polytechnic Institute.
B.L.A., Massachusetts State College.
Fletcher, G. W.[1] Sociology . . . . . Readsboro, Vt.
B.A., Acadia University.
Fletcher, Robert B.[1] Agricultural Economics . . . . . Amherst
B.S., M.S., Massachusetts State College.
Flower, Mrs. Ione K.[1 2 3] Education . . . . . Deerfield
A.B., Indiana University.
Flynn, Charles B.[3] Education . . . . . Yonkers, N. Y.
B.S., Manhattan College.
Flynn, James H.[1 3] Chemistry . . . . . Easthampton
B.S., Massachusetts State College.
Foley, Daniel J.[3] Horticulture . . . . . Salem
B.S., Massachusetts State College.
Foley, Nellie M.[1] Bacteriology . . . . . Boston
B.S., M.A., New York University.
Foley, William J.[1] Education . . . . . Springfield
A.B., College of the Holy Cross.
M.S., Massachusetts State College.
Forman, K. W.[1] Education . . . . . Hathorne
B.S.A., University of Toronto.
Foth, Charles E.[3] Education . . . . . Amherst
B.A., M.A., Amherst College.
French, Chester L.[1 3] Chemistry . . . . . Greenfield
B.S., Massachusetts State College.
French, Willard K.[3] Horticulture . . . . . Worcester
B.S., Massachusetts State College.
Froberger, George A.[1] Education . . . . . Shelburne Falls
A.B., University of Maine.
Frundt, Rudolph J.[1 3] Chemistry . . . . . Holland, Michigan
A.B., Hope College.
Gavagan, James E.[2] English . . . . . Dorchester
B.S., Massachusetts State College.
Gerlack, Carl S.[3] Landscape Architecture . . . . . East Detroit, Michigan
B.S., Michigan State College.
Germany, Claude B.[1] Education . . . . . Athol
A.B., Harvard University.
M.S., Massachusetts State College.

Gleason, Mrs. Marian.[1] Education . . . . . Amherst
A.B., Smith College.
Golub, Barnett L.[3] Education . . . . . East Longmeadow
B.S., Massachusetts State College.
Goodell, Herbert A.[1] . . . . . Amherst
B.S., Massachusetts State College.
Goodell, Mrs. Irene A.[1 3] Botany . . . . . Amherst
B.S., Massachusetts State College.
Grayson, Herbert.[1 2 3] Education . . . . . Holden
B.S., Massachusetts State College.
Griffiths, Francis P.[1] Bacteriology . . . . . North Amherst
B.S., University of Washington.
M.S., Ph.D., Massachusetts State College.
Gurney, Ashley B.[1] Entomology . . . . . Cummington
B.S., M.S., Massachusetts State College.
Haddock, Jay L.[1] Agronomy . . . . . Amherst
B.S., Brigham Young University.
M.S., Massachusetts State College.
Hamilton, J. Bruce.[1] . . . . . West Roxbury
A.B., Oberlin College.
Hamilton, William B.[1] Bacteriology . . . . . Lexington, Ky.
B.S.A., Macdonald College.
Ph.D., Massachusetts State College.
Hanson, John R.[1] Agricultural Economics . . . . . Waltham
B.S., M.S., Massachusetts State College.
Harvey, Edward W.[1 3] Bacteriology . . . . . Amherst
B.S., Massachusetts State College.
Hassett, J. Frank.[1] Education . . . . . Worcester
Ph.B., College of the Holy Cross.
Hatch, Miriam.[3] Education . . . . . North Amherst
B.S., Massachusetts State College.
Hawley, Helen M.[2] Education . . . . . Holyoke
B.S.E., Salem State Teachers College.
Healy, Mrs. Winston.[3] . . . . . Shelburne Falls
A.B., Smith College.
Healy, Winston [3] . . . . . East Charlemont
A.B., Williams College.
Hodge, Walter H.[1 3] Botany . . . . . Worcester
A.B., Clark University.
Holway, Richard T.[3] Entomology . . . . . South Duxbury
A.B., Dartmouth College.
Houlihan, Elizabeth P.[1] Education . . . . . Springfield
B.S.E., Westfield State Teachers College.
Hubbard, Catherine N.[1 2 3] Education . . . . . Sunderland
B.S., Massachusetts State College.
Hunt, James F.[1] Education . . . . . Portland, Maine
B.S., University of Pennsylvania.
M.S., Massachusetts State College.
Isgur, Benjamin.[1 3] Agronomy . . . . . Dorchester
B.S., M.S., Massachusetts State College.
Isham, Paul D.[1] Chemistry . . . . . Amherst
B.S., M.S., Ph.D., Massachusetts State College.
Jancik, Vladimir.[3] Horticultural Manufactures . . . . . Czeckoslovakia
Tng. Chem., Czeckoslovakia Technical High School.
Jenkins, Herbert.[1] Dairy Industry . . . . . Methuen
B.S., Massachusetts State College.
Jenness, Raymond.[1 3] Education . . . . . Huntington
B.S.E., Bridgewater State Teachers College.
Johnson, Edith E.[2] History . . . . . Quincy
B.S., Simmons College.
Johnson, Eunice M.[3] Botany . . . . . Amherst
B.S., Massachusetts State College.
Johnson, Mrs. Ruth S.[1] Education . . . . . Florence
A.B., Oberlin College.
Karlson, Gustaf Andrew.[1 3] Education . . . . . Worcester
B.V.A., Massachusetts State College.
Keefe, Katherine G.[2] History . . . . . Hadley
B.A., College of New Rochelle.
Keiler, Emile.[1 3] Education . . . . . Easthampton
B.S.E., Fitchburg State Teachers College.
Keller, Vernet S.[1] Education . . . . . Hatfield
B.S., Middlebury College.
M.S., Massachusetts State College.
Kimball, Evelyn.[1] Bacteriology . . . . . Amherst
B.S., Middlebury College
M.S., Massachusetts State College.
Klaucke, Elfriede.[1 2 3] Agronomy . . . . . Worcester
B.S., Massachusetts State College.
Klein, Isaac.[3] Education . . . . . Springfield
B.S., College of the City of New York.
Knight, David J.[1] Dairy Industry . . . . . Amherst
B.S.A., North Carolina Agricultural College.
Knudsen, Harold R.[2] Education . . . . . Springfield
B.S., Brigham Young University.
M.S., Massachusetts State College.
Krasnecki, Stacey A.[1] Science . . . . . North Chelmsford
B.S.E., Framingham State Teachers College.
Kucinski, Karol.[1 3] Agronomy . . . . . Amherst
B.S., Massachusetts State College.
Kuzmeski, John W.[3] Chemistry . . . . . Amherst
B.S., Massachusetts State College.

Landers, Thomas B.[2] Education . . . . . Bondsville
Ph.B., University of Detroit.
La Rose, Anna F.[3] Education . . . . . Springfield
B.S.E., Westfield State Teachers College.
Levine, Arthur S.[2 3] Horticultural Manufactures . . . . . Brookline
B.S., Massachusetts State College.
Lind, Melva E.[1] . . . . . Minneapolis, Minn.
B.A., University of Minnesota.
Lohan, Francis M.[1] Education . . . . . Springfield
A.B., St. Michaels College.
M.S., Massachusetts State College.
Love, Andrew W.[1 3] Education . . . . . Auburn
B.S., Massachusetts State College.
Lucey, Alexander A.[1 3] Sociology . . . . . Medford
B.S., Massachusetts State College.
Lucey, John P.[1] Economics . . . . . Holyoke
B.A., Amherst College.
M.A., Columbia University.
Lyle, C. Collis, Jr.[3] Languages and Literature . . . . . Ventnor City, N. J.
B.A., M.A., Cornell University.
Lynch, Harold E.[1 3] Education . . . . . Pittsfield
A.B., Clark University.
MacCleery, Russell.[1] Education . . . . . Hathorne
B.S., Massachusetts State College.
Maclinn, Walter A.[1 3] Horticultural Manufactures . . . . . Amherst
B.S., M.S., Massachusetts State College.
Madden, Archie H.[1] Entomology . . . . . Amherst
B.S., Massachusetts State College.
Margolin, Oscar.[3] Dairy Industry . . . . . Newtonville
B.S., Massachusetts State College.
Marston, George A.[1] Geology . . . . . Amherst
B.S., Worcester Polytechnic Institute.
M.S., University of Wisconsin.
Martin, Edward W.[2] Education . . . . . Hudson
B.S., Massachusetts State College.
McAndrews, Walter F.[1 2 3] Education . . . . . Hartford, Conn.
B.S.E., Fitchburg State Teachers College.
McCabe, Winifred A.[2] Education . . . . . Roslindale
B.E., Boston Teachers College.
McCarthy, Shirley E.[1] Education . . . . . Greenfield
B.S., Massachusetts State College.
McGuckian, Ambrose T. Agricultural Economics . . . . . Roslindale
B.S., Massachusetts State College.
McGuckian, John W.[1] Education . . . . . Roslindale
B.S., Massachusetts State College.
Merriam, Oreana A.[1 3] Horticultural Manufactures . . . . . Amherst
B.S., University of Vermont.
Merrill, George L.[3] Education . . . . . Ware
Institute of Musical Art of the Juilliard School of Music.
Meyers, Charles E.[3] Landscape Architecture . . . . . Delta, Colorado.
B.S., Colorado State College.
Miller, Donald R.[1] Education . . . . . Northampton
A.B., Bucknell University.
Miller, Joseph.[2 3] Horticultural Manufactures . . . . . Roxbury
B.S., Massachusetts State College.
Mills, Ernest M.[3] Horticultural Manufactures . . . . . Amherst
B.S., Cornell University.
Minarik, Charles E.[1] Chemistry . . . . . Westfield
B.S., M.S., Massachusetts State College.
Mitchell, Margaret J.[1] Education . . . . . Springfield
B.S.E., Westfield State Teachers College.
Mitchell, Paul C.[1] Chemistry . . . . . Belchertown
A.M., Marion College.
A.B., Amherst College.
Monosmith, Rudolph.[3] Landscape Architecture . . . . . Amherst
B.S., Mississippi A. and M. College.
Moore, Carroll P.[3] Education . . . . . Somers, Conn.
B.S., Connecticut State College.
Moore, Prudie R.[1] Education . . . . . Mount Hermon
B.S., Colby College.
Moore, William J.[1] Agronomy . . . . . Pittsburg, Pa.
B.S., M.S., Pennsylvania State College.
Moran, John F.[1 3] Education . . . . . Pittsfield
B.S.E., Fitchburg State Teachers College.
Morse, Miriam.[1 3] Entomology . . . . . Amherst
B.S., St. Lawrence University.
M.S., Massachusetts State College.
Moseley, Louis H.[1 2] Education . . . . . Agawam
B.S., Massachusetts State College.
Mountain, David C.[3] Bacteriology . . . . . Pittsfield
B.S., Massachusetts State College.
Mueller, W. S.[1] Chemistry . . . . . Amherst
B.S., University of Illinois.
M.S., State University of New Jersey.
Muir, Gilbert.[1 3] Education . . . . . Shelburne Falls
B.S., Colby College.
Murphy, Charles E.[1] Education . . . . . Pittsfield
A.B., College of the Holy Cross.
M.S., Massachusetts State College.
Murphy, Philip.[1] Education . . . . . Greenfield
B.S., Fordham University.

Nash, Edmond.[3] Landscape Architecture . . . . . Greenfield
B.S., Massachusetts State College.
Newton, Alfred E.[3] Chemistry . . . . . Sharon
B.S., Massachusetts State College.
Nichols, Chester W.[1] Education . . . . . Amherst
B.S., Massachusetts State College.
Novick, Julius.[3] Horticultural Manufactures . . . . . Amherst
B.S., Massachusetts State College.
Numbers, Fred C.[3] Education . . . . . Northampton
B.A., University of Rochester.
O'Brien, Allan J.[3] Education . . . . . Northampton
B.S., Massachusetts State College.
O'Brien, M. Josephine.[1 2] Education . . . . . Lee
A.B., College of New Rochelle.
Oliver, Charles F.[3] Education . . . . . Brockton
B.S., Massachusetts State College.
Onsdorff, Thomas.[1] Horticultural Manufactures . . . . . Corvallis, Oregon
B.S., Oregon State College.
M.S., Massachusetts State College.
Parent, Leslie M.[3] Economics . . . . . Westfield
A.B., College of the Holy Cross.
Parker, Ruth L.[1] Education . . . . . West Springfield
B.S., Framingham State Teachers College.
M.S., Massachusetts State College.
Parrott, Ernest M.[1] Chemistry . . . . . North Amherst
B.S., Union University.
M.S., Massachusetts State College.
Pease, George R.[3] Chemistry . . . . . Amherst
B.S., Massachusetts State College.
Pelissier, Raymond.[1 3] Agricultural Economics . . . . . Hadley
B.S., Massachusetts State College.
Pomerantz, Miriam.[3] Education . . . . . Springfield
B.S.E., Westfield State Teachers College.
Ponte, Edward P.[3] Education . . . . . Springfield
B.S.E., Fitchburg State Teachers College.
Porter, Wayland R.[2] Education . . . . . Amherst
B.S., Carnegie Institute of Technology.
Potter, Rial S.[3] Chemistry . . . . . Springfield
B.S., Massachusetts State College.
Pray, Francis C.[3] Sociology . . . . . Amherst
B.S., Massachusetts State College.
Pushee, Ruth.[1 3] Education . . . . . North Amherst
B.S., Massachusetts State College.
Rice, Clara R.[1] Education . . . . . Charlemont
B.S., Massachusetts State College.
Riseman, Henry F.[3] Poultry Science . . . . . Winthrop
B.S., Massachusetts State College.
Roberts, Oliver C.[2] Pomology . . . . . Amherst
B.S., Massachusetts State College.
Robinson, Edythe L.[1 3] Education . . . . . Milford
B.L.I., Emerson College of Oratory.
Robinson, Phillip.[3] Education . . . . . Chelsea
B.S., Massachusetts State College.
Roney, Jeanette M.[1 2] Education . . . . . Huntington
B.A., University of Maine.
Ross, Charles F.[1 2 3] Education . . . . . Auburn
B.S., Massachusetts State College.
Royal, Raymond.[1] Education . . . . . Adams
B.S., Massachusetts State College.
Savaria, Thomas J.[3] Dairy Industry . . . . . Ware
B.S., Massachusetts Sate College.
Schwarz, Raphaella E.[1] Psychology . . . . . Northampton
A.B., George Washington.
B.S., Columbia University.
Sharkey, Mary F.[2] Education . . . . . Pittsfield
B.S.E., Boston Teachers College.
Sharpe, Charles G.[1] Education . . . . . Westfield
B.S., Massachusetts State College.
Sibson, James A.[1] Education . . . . . Milford
B.S., Massachusetts State College.
Smart, Harold W.[3] Sociology . . . . . Amherst
A.B., Amherst College.
Smith, Beulah E.[2] English . . . . . Charlemont
A.B., Boston University.
Smith, Marion E.[3] Entomology . . . . . Amherst.
B.S., Massachusetts State College.
Smith, Olive.[1 3] Education . . . . . Springfield
B.S.E., Bridgewater State Teachers College.
Smith, William T.[1 3] Education . . . . . West Springfield
B.S., Massachusetts State College.
Snow, Russell L.[1] Education . . . . . Arlington
B.S., M.S., Massachusetts State College.
Snow, Samuel P.[3] Landscape Architecture . . . . . Roxbury
B.S., Massachusetts State College.
Sokol, Alexander K.[1] Education . . . . . Greenfield
B.S.E., Fitchburg State Teachers College.
M.S., Massachusetts State College.
Spaulding, Mrs. Leora J.[1] Education . . . . . Amherst
B.S., A. and T. College of North Carolina.
M.S., Massachusetts State College.

Spaulding, Major F.[1] Agronomy . . . . . Amherst
B.S.A., A. and T. College of North Carolina.
B.S., M.S., Cornell University.
Ph.D., Massachusetts State College.
Spence, Dorothy.[1] Education . . . . . Huntington
B.A., University of New Hampshire.
Stepat, Walter.[2 3] Horticultural Manufactures . . . . . Braintree
B.S., Massachusetts State College.
Stinson, Kenneth E.[1] Education . . . . . Greenfield
B.S., Massachusetts School of Art.
Stone, Philip C.[3] Entomology . . . . . Athol
B.S., Massachusetts State College.
Stuart, Wallace W.[1] Chemistry . . . . . Littleton Common
B.S., Ph.D., Massachusetts State College.
Syrocki, Adam V.[1] Bacteriology . . . . . New Britain, Conn.
B.S., Connecticut State College.
M.S., Massachusetts State College.
Taylor, Marion R.[1] Chemistry . . . . . Greenfield
B.S., M.S., Massachusetts State College.
Thatcher, Christine.[2] Education . . . . . Cummington
B.S., M.S., Massachusetts State College.
Thompson, Leonard L.[1] Agricultural Economics . . . . . Greenfield
B.S., Massachusetts State College.
Torno, William H.[3] Education . . . . . Holyoke
B.S.E., Fitchburg State Teachers College.
Tufts, William H.[1 2 3] Education . . . . . Shelburne Falls
B.S., Michigan State College.
Tuttle, Alden P.[2] . . . . . Amherst
B.S., Massachusetts State College.
M.S., Pennsylvania State College.
Urbanovsky, Elo J.[1] Landscape Architecture . . . . . West Texas
B.S., Texas A. and M. College.
Veerling, John P.[3] Landscape Architecture . . . . . East Weymouth
B.S., Massachusetts State College.
Watson, Vernon K.[1 2 3] Horticultural Manufactures . . . . . Amherst
B.S., M.S., Massachusetts State College
Weeks, Mildred A.[2] Education . . . . . South Amherst
A.B., Radcliffe College.
M.S., Massachusetts State College.
Wendler, Henry G.[1] Science . . . . . Allston
B.S.E., Boston Teachers College.
Williams, Edna E.[3] Sociology . . . . . Holyoke
B.A., College of New Rochelle.
Williams, Inez W.[1 3] Entomology . . . . . Brockton
B.S., M.S., Massachusetts State College.
Wilk, Joseph A.[2] Sociology . . . . . Adams
A.B., University of Notre Dame.
A.M., Columbia University.
Witt, Earl M.[2] Education . . . . . Belchertown
B.S., Massachusetts State College.
Wood, Gwendolyn S.[3] Bacteriology . . . . . El Monte, California
B.A., University of California.
Worthington, James M.[3] . . . . . Amherst
B.A., Williams College.
M.A., Columbia University.
Yegian, Hrant.[1] Agronomy . . . . . Amherst
B.S., Iowa State College.
Yoerg, Mary C.[1] . . . . . Pittsfield
B.S., New York University.
Zerbone, Vivian M.[2] History . . . . . New Bedford
A.B., Smith College.

SUMMARY GRADUATE STUDENTS

	Men	Women	Total
Enrolled during academic year, 1934–35	105	35	140
Enrolled in Summer School, 1935	25	17	42
Enrolled during first semester, 1935–36	96	26	122
Total excluding duplications	176	59	235

UNDERGRADUATE STUDENTS.

CLASS OF 1936.

Adams, Ralph Terry	Athol	Colonial Inn
Allen, Elmer Howes	South Hadley	French Hall
Allen, George Howard	Westboro	42 McClellan Street
Allen, Roger Everett	Shrewsbury	70 Lincoln Avenue
Allis, Gertrude Helen	Conway	35 Woodside Avenue
Anacki, Michael	West Suffield, Conn.	3 McClellan Street
Andrus, Harriett Katherine	Springfield	Lambda Delta Mu
Arenberg, Isaac Moses	Rochester	1 Cosby Avenue
Arnold, Ralph Alexander	Franklin	R.F.D. 3, Box 81
Babcock, Chester Ira	Newtonville	Kappa Sigma
Baizman, Maurice Herman	Chelsea	Phi Lambda Tau
Baker, Elizabeth Weston	Braintree	The Homestead
Balavich, Daniel Algerd	North Andover	42 McClellan Street
Ballou, Donald Murch	Holyoke	Alpha Sigma Phi
Barrows, Randolph Corbin	Stafford Springs, Conn.	Q. T. V.

Barton, Jackson Arthur	Boston	14 Gray Street
Bearse, Carleton Everett	Sharon	Lambda Chi Alpha
Bernstein, Morris	Everett	North College.
Bilsky, Florence Selma	Springfield	Adams House
Bishop, Gordon Harold	Athol	Phi Sigma Kappa
Bixby, Arthur Frederick	Sunderland	Sunderland
Bliss, William Roderic	Springfield	10 Nutting Avenue
Bosworth, Clare Elizabeth	Holyoke	16 Nutting Avenue
Boylan, Myles Gerald	Watertown	Thatcher Hall
Bradley, Barbara Barker	Southfield	Draper Hall
Bray, Robert Story	Gloucester	Alpha Sigma Phi
Brennan, Owen Joseph	Wheelwright	83 Pleasant Street
Bridges, Ella Mabel	South Deerfield	
Briere, Arnold Charles	Holyoke	168 Essex Street, Holyoke
Britton, Elva Louise	Pittsfield	Sigma Beta Chi
Brueckner, Alfred Herold	Springfield	Kappa Sigma
Bruns, Helen Norris	Somerville	1 Sunset Court
Bull, Fredrick Kemmerer	Springfield	Care of Prof. Sears, Mt. Pleasant
Bullard, Marian Elizabeth	North New Salem	30 North Prospect Street
Burke, Francis Campbell	Clinton	Phi Sigma Kappa
Cance, Edmond Leland	Amherst	9 Fearing Street
Cawley, Mary Alice	Winthrop	Adams House
Chase, Madelin	Winthrop	19 Phillips Street
Chase, Milton Earle	Monument Beach	Alpha Gamma Rho
Chilson, William Wallace	Northampton	Mount Pleasant
Clapp, James Wellington	Springfield	Kappa Sigma
Clark, Robert Brown	Sharon	72 Lincoln Avenue
Clarke, James Roe	Milton, N. Y.	Mt. Pleasant
Congdon, Frederick Richard	Great Barrington	83 Pleasant Street
Cook, Philip Richard	Haydenville	84 Pleasant Street
Cooney, Mary Abbie	Interlaken	Alpha Lambda Mu
Corcoran, Mary Dorothy	Stoneham	Sigma Beta Chi
Crabtree, Lois	Gardner	Homestead
Cronin, Joseph Vincent	Haverhill	20 Pleasant Street
Crowe, Gerald David	Schenectady, N. Y.	5 Sunset Avenue
Cuthbertson, Kenneth Earl	Millers Falls	West Experiment Station
Czajkowski, Janina Mary	Amherst	R.F.D. 3, Box 88
Danaczko, John	South Hadley	26 Ferry Street, South Hadley
Davidson, James	Norwood	Care of Dr. Alexander
Davis, Barbara Jewell	Lexington	1 Sunset Court
DeFelice, Domenic	Belmont	11 Phillips Street
deWilde, Louis	Shiloh, N. J.	84 Pleasant Street
Dimock, Ralph Warren	Oxford	Baker Lane
Donnelly, Donald Tracy	Chester	Kappa Epsilon
Dow, Hazel Marie	Haverhill	Phi Zeta
Driscoll, Frances Marie	Holyoke	Phi Zeta
Driscoll, Paul John	Northampton	Care of Dr. Lindsey, Mount Pleasant
Dunbar, Malcolm Ramsey	Barre	Phi Sigma Kappa
Dunker, Carl Frederick	Holyoke	11 Phillips Street
Eaton, Alden Robinson	North Reading	South Amherst
Elder, Henry Holton	Mt. Hermon	5 McClellan Street
Ferguson, Herbert William	Pittsfield	13 Phillips Street
Fillmore, Eleanor Clarke	Melrose	22 Fearing Street
Finkelstein, Carleton Jesse	Revere	Phi Lambda Tau
Fisher, Allyn Hubbard	Norwood	Care of Dr. Alexander
Fiske, Franklin Howe	Greenfield	109 High Street, Greenfield
Fitzgerald, Patrick James	Haverhill	83 Pleasant Street
Flynn, Anna Agnes	Millers Falls	Adams House
Flynn, John Hanlon	Palmer	27 Pleasant Street, Palmer
Ford, Marguerite Marylin	Brockton	Sigma Beta Chi
Forer, Bertram Robin	Springfield	Phi Lambda Tau
Foster, Jack Walter	Winthrop	86 Pleasant Street
Franco, John Estrela	East Falmouth	11 Phillips Street
Frye, Bradley Luther	Orange	Orange
Garbose, Dorothy	Gardner	Adams House
Gardner, Alfred Hamilton, Jr.	Belmont	Phi Sigma Kappa
Gates, Chester Mason	Southbridge	Theta Chi
Gillett, Lewis Chapman	Littleton	33 Cottage Street
Gillette, Willard Raymor	North Billerica	93 Pleasant Street
Gingras, Irene Virginia	Blackinton	Adams House
Glazier, Lynn Rodney	Leverett	Leverett
Glick, Dean Newton	Amherst	6 North Hadley Road
Glickstein, Myer	Chelsea	34 McClellan Street
Glynn, Charles Nelson	Springfield	16 North Prospect Street
Goddard, William Leonard	Littleton	11 Phillips Street
Gold, Arthur Jacob	Boston	Alpha Epsilon Pi.
Goldman, David	Dorchester	44 Triangle Street
Govone, Louise Charlotte	Sandwich	19 Phillips Street
Greenwood, Frank	Methuen	R.F.D. 3, Box 81
Hager, Elizabeth Warner	South Deerfield	The Homestead
Hakanson, Christine Evelyn	Worcester	Phi Zeta
Hale, Harold Homer	Tolland	Sigma Phi Epilson
Haley, Louise Mary	Chester	61 Lincoln Avenue
Hall, Constance Hathaway	Sharon	22 Fearing Street
Hannum, Calvin Siddell	Pittsfield	Thatcher Hall
Haselhuhn, Donald Henry	Springfield	10 Nutting Avenue
Hixon, Adin Allyne	Worcester	North College
Hopkins, Alice Lillian	Orleans	Alpha Lambda Mu
Horgan, Frances Mary	Beverly	Adams House
Horrigan, Leonta Gertrude	West Springfield	30 North Prospect Street

Hutchinson, Margaret	Amherst	Phi Zeta
Hutt, Robert Frederick	Glastonbury, Conn.	Sigma Phi Epsilon
Jillson, Stuart Farnham	Readsboro, Vt.	Baker Lane
Johnson, Carroll Reed	Shirley	Theta Chi
Johnson, David Lewis	Holden	Birch Lawn
Johnson, Harry Agnew	Northborough	Alpha Sigma Phi
Jones, Marion Elnora	Springfield	Phi Zeta
Kaplovitz, Maxwell	Winthrop	North College
Kaufman, Allan Max	Dorchester	Alpha Epsilon Pi
Keefe, Robert Alexander	Franklin	Alpha Sigma Phi
Kelleher. Bernard John	Turners Falls	Sigma Phi Epsilon
Kennett, Richard Tomfohrde	West Medford	Theta Chi
Kerr, James, Jr.	Adams	34 Main Street
Kerr, Theodore William Jr.	Medford	3 McClellan Street
King, Priscilla	Melrose	8 Allen Street
Kingston, Lucy Orcelia	Springfield	Adams House
Kleyla, Mildred Elizabeth	South Deerfield	South Deerfield
Klickstein, David	Malden	North College
Koenig, Emil John, Jr.	Jefferson	Alpha Gamma Rho
Krasnoff, Joseph Harold	Roslindale	44 Triangle Street
Krtil, Charles Lewis	Westfield	Phi Sigma Kappa
Lannon, Marjorie Louise	Holyoke	19 Phillips Street
Laubenstein, Norvin Clement	Maynard	Lambda Chi Alpha
Lavin, Edward	Springfield	43 Algonquin Street, Springfield
Law, Edward Victor	Belmont	Theta Chi
LeDuc, Marguerite Rita	Ware	Adams House
Lehr, Fred Anthony	Springfield	68 Parkside Street, Springfield
Lesquier, Dolores Emma	Springfield	Phi Zeta
Levine, Lester Henry	Dorchester	Phi Lambda Tau
Lincoln, Madeline Hazel	Belchertown	44 Pleasant Street
Lincoln, Robert Bradley	Taunton	Kappa Sigma
Lipovsky, Irving	Springfield	Eames Avenue
Logan, Robert Mellor	Lawrence	84 Pleasant Street
Lord, Francis Alfred	Northampton	Q. T. V.
Lord, Thomas Henry	Arlington	Kappa Epsilon
Lothrop, Cummings Lincoln	Springfield	Apiary
Low, Elizabeth	Arlington	The Homestead
Lubach, Helen	Mattapan	Draper Hall
Macintosh, Phyllis Garry	North Dana	The Homestead
Mallory, Evelyn Marie	Amherst	73 East Pleasant Street
Marsh, Charles William	Feeding Hills	Alpha Sigma Phi
Martin, Gertrude Evelyn	Shrewsbury	Adams House
Masters, Dorothy Louise	Stockbridge	64 Lincoln Avenue
McConchie, John Lewis	Monson	Phi Sigma Kappa
Michaelson, Abraham Irving	Revere	North College
Midgley, Harold Austin	Worcester	Phi Sigma Kappa
Miner, Philip Barton	Holyoke	65 Columbus Avenue, Holyoke
Monroe, George Edward	East Weymouth	Lambda Chi Alpha
Moran, Charles Henry	East Boston	Stockbridge Hall
Murphy, Fred Joseph	Belmont	Sigma Phi Epsilon
Neuman, Samuel	Dorchester	East Pleasant Street
Newman, Kenneth Raycraft	Florida	Care of C. Hauff, Chestnut St.
Newman, William Joseph MacKenzie	Florida	Alpha Gamma Rho
Norwood, Terrence Shanahan	Greenfield	193 Silver Street, Greenfield
Noyes, Lorraine Fisherdick	Glen Roch, N. J.	Sigma Beta Chi
Nurmi, Dorothy	Westminster	Lambda Delta Mu
O'Brien, Katherine Louise	Amherst	The Homestead
Packard, Clarence Adelbert	Amherst	8 College Avenue
Parker, Howard Clarence	Bondsville	Alpha Gamma Rho
Parsons, Edith Mildred	Turners Falls	22 Fearing Street
Paulding, Marion Louise	South Hanson	45 Pleasant Street
Pearlmutter, David Berstein	Revere	1 Cosby Avenue
Peckham, Richard Tufts	West Medford	42 McClellan Street
Peterson, Lester Carl	Quincy	3 McClellan Street
Pineo, Clare Linwood	Mt. Tom	West Experiment Station
Plastridge, Daniel Clayton	Bedford	15 Woodside Avenue
Pratt, Harry Davis	North Adams	10 Farview Way
Proctor, Bessie Louise	Lunenburg	3 Cosby Avenue
Proctor, Raymond Norris	Lunenburg	70 Lincoln Avenue
Putnam, Arthur Allan	Wilbraham	Theta Chi
Putnam, Oliver Ripley	Danvers	Alpha Gamma Rho
Rafter, Beatrice Norma	Sharon	22 Fearing Street
Raleigh, Walter Dalton	West Springfield	Sigma Phi Epsilon
Reardon, Helen Marie	Amesbury	Sigma Beta Chi
Reed, Ruth Vassall	Waltham	5 McClure Street
Richards, Albert Peter	Amherst	Sigma Phi Epsilon
Riley, Richard Grimshaw	Barre Plains	Phi Sigma Kappa
Rose, William Arthur	Winthrop	101 Pleasant Street
Roys, Charles Trescott	Sheffield	6 North Hadley Road
Rutstein, Jack	Everett	North College
Sandford, Addison Lawton	Ware	Sigma Phi Epsilon
Saulnier, Florence Mae	Worcester	Adams House
Sawyer, Helen Louise	Littleton	8 Allen Street
Shulkin, Arnold Samuel	Revere	Alpha Epsilon Pi
Sjogren, Charles Norman	Easthampton	14 Chapman Avenue, Easthampton
Smith, Francene	Walpole	Phi Zeta
Smith, Gladys Virginia	Westfield	Phi Zeta
Snow, Raymond Milton[1]	Lawrence	9 Fearing Street

[1] Candidate for degree of Bachelor of Vocational Agriculture.

Soulliere, Edward Joseph	Worcester	Phi Sigma Kappa
Stefanelli, Velda	South Hadley	16 Alvord Street, South Hadley
Stewart, John William	Needham	Kappa Sigma
Stratton, Virginia	Lee	Alpha Lambda Mu
Sturtevant, Jack	Lynnfield Center	Durfee Range
Sullivan, Edmund Joseph	Milford	Phi Sigma Kappa
Sweinberger, Ralph Frederick	Holyoke	24 Beston Street
Tanner, Royal Kendrick	Greenfield	85 Sanderson Street, Greenfield
Taylor, David Henry	Methuen	Kappa Sigma
Thayer, Charles Vallentine	Amherst	Hickory Farm
Thompson, Richard Hugh	Colrain	Theta Chi
Tikofski, Adolph Edward	Walpole	Baker Lane
Trask, Owen Smith	Lexington	North College
Valentine, James Alden, Jr.	South Walpole	Phi Sigma Kappa
Vickery, Gertrude Mabel	Greenfield	45 Pleasant Street
Wainio, Walter	Maynard	Lambda Chi Alpha
Warner, Roger Lewis	Williamsburg	Phi Sigma Kappa
Wentworth, Frances	Pittsfield	Adams House
Whaley, William Gordon	East Moriches, N. Y.	84 Pleasant Street
Whitaker, Spofford	West Medford	Phi Sigma Kappa
Whitney, Marjorie Eleanor	Westminster	Lambda Delta Mu
Willard, Luther Lincoln	Worcester	Davenport Inn
Winsor, Sylvia Bancroft	New Bedford	3 Cosby Avenue
Wolcott, Thomas Bernard	Westfield	Kappa Sigma
Wood, John Langille	Greenfield	Sigma Phi Epsilon
Worden, Betsy	West Springfield	Phi Zeta
Zak, John Michael	Sunderland	62 Lincoln Avenue
Ziomek, Apolonia Julia	Amherst	R.F.D. 3, Box 129

CLASS OF 1937.

Aiken, Ralph Emerson, Jr.	Georgetown	Phi Sigma Kappa
Appel, Charles	Holyoke	44 Brookline Avenue, Holyoke
Appel, John	Holyoke	44 Brookline Avenue, Holyoke
Ash, Rose Jane	Holyoke	Adams House
Avery, Arthur Chester	Amherst	45 East Pleasant Street
Baggs, Barbara Edwards	Belchertown	30 North Prospect Street
Ballard, Dorothy Veronica	Gilbertville	Adams House
Barnes, Lois Brewster	Florence	Sigma Beta Chi
Barr, Isadore	Springfield	Alpha Epsilon Pi
Basamania, Alfred Walter	Holyoke	24 Beston Street
Benea, Charles	North Plymouth	Alpha Sigma Phi
Berman, Nathan Milton	Mattapan	9 Phillips Street
Bernstein, Edwin George	Springfield	North College
Berry, Franklyn Doane	Dennis Port	Alpha Sigma Phi
Bevington, Alice Barlow	Lawrence	Adams House
Bieber, Robert Anthony	Hatfield	Sigma Phi Epsilon
Birdsall, Ernest Leslie	Lawrence	11 Phillips Street
Birnie, Catherine Martha	Ludlow	Abigail Adams House
Blackmer, Leroy Lewis, Jr.	North Brookfield	Kappa Sigma
Blassberg, Ruth	Turners Falls	2 Allen Street
Bliss, Walter Drahorad	Attleboro	Alpha Sigma Phi
Bobula, Paul Frederick	West Roxbury	66 Lincoln Avenue
Bohm, Richard Oscar	East Milton	Phi Sigma Kappa
Bolton, Horace Winfield	East Northfield	86 Pleasant Street
Bongiolatti, Louis	Adams	Sigma Phi Epsilon
Boucher, Mary Elizabeth	Easthampton	Sigma Beta Chi
Boyden, Alma Ruth	Boylston	Phi Zeta
Bradford, Priscilla Marie	North Raynham	Sigma Beta Chi
Breault, Louis Adelard, Jr.	Auburn	Lambda Chi Alpha
Breinig, Mary Rebecca	Northfield	Phi Zeta
Brenna, Frank George	Milford	9 Phillips Street
Bristol, Gilbert Dearborn[1]	East Longmeadow	Alpha Gamma Rho
Brooks, John Poor	Holliston	53 Lincoln Avenue
Brouillet, Lucille Constance	Springfield	13 Fearing Street
Brown, Dorothy Imogene	Feeding Hills	Sigma Beta Chi
Bruneau, Alfred Washburn	North Plymouth	3 McClellan Street
Butler, Malcolm Suffolk	Saugus	5 Baker Lane
Butterfield, Norman Wesley	Pittsfield	42 Lincoln Avenue
Byrnes, John Joseph	Pittsfield	19 Fearing Street
Cain, Marjorie Grant	Conway	Phi Zeta
Cain, Muriel Elizabeth	Conway	Phi Zeta
Calkins, Margaret	Harvard	Adams House
Carbonneau, Leo William	Ware	Kappa Sigma
Chandler, Webster Allen	Melrose	Davenport Inn
Ciosek, Carl Peter	Chicopee	Alpha Sigma Phi
Clark, Barbara May	Dodge	19 Phillips Street
Clark, Barbara Ruth	Ashfield	Adams House
Clark, Leroy French	Walpole	15 Fearing Street
Cohen, Melvin Irving	Roxbury	East Pleasant Street
Conner, Virginia Justine	Westfield	Adams House
Conway, Raymond Francis	Holyoke	20 Pleasant Street
Cosmos, Louis Elias	Springfield	38 Cottage Street
Couhig, Robert Emmet	Beverly	Q. T. V.
Craft, Clayton Chester	Ashfield	15 Fearing Street
Crowley, Leo Vincent	Amherst	83 Main Street
Cushman, Francis Elliot	Kingston	Alpha Sigma Phi
Cutter, James Frederick	West Hatfield	Kappa Sigma

[1] Candidate for degree of Bachelor of Vocational Agriculture.

Dame, Frederick Russell	Athol	Lambda Chi Alpha
Davis, Ernest Kirk	Lee	Kappa Epsilon
Desmond, Richard Clancy	East Lynn	Birch Lawn
Dihlmann, Henry George	Shutesbury	North Amherst
Dobby, James	Winthrop	Alpha Epsilon Pi
Dodge, Elizabeth Louise	Ashland	Adams House
Domenici, Trento Joseph	Holyoke	Sigma Phi Epsilon
Donnelly, Dorothea Margaret	Chester	2 Sunset Court
Downing, Helen Anna	Holyoke	181 Park Street, Holyoke
Driscoll, Howard Bernard	Holyoke	213 Lyman Street, Holyoke
Dunphy, Esther Mae	South Hadley Falls	59 High Street, South Hadley Falls
Entin, Moses Jacob	Boston	Phi Lambda Tau
Eshbach, Charles Edgar	Winchester	Care of Dr. Lindsey, Mt. Pleasant
Fargo, Alburn Lasell	Monterey	7 Allen Street
Farrell, Kenneth Thomas	Brookline	Alpha Gamma Rho
Ferrell, Edson John	North Agawam	47 Bridge Street, North Agawam
Ferrucci, Anthony Patrick	South Milford	31 Fearing Street
Filios, Angela Mary	Westfield	19 Phillips Street
Filipkowski, Sabin Peter	East Whately	East Whately
Fisher, Austin Wellington, Jr.	Auburndale	Theta Chi
Fisher, Robert Bernard	Northampton	Kappa Epsilon
Freedman, Joseph	Holyoke	420 Hillside Avenue, Holyoke
Friedman, Hillel Henry	Roxbury	East Pleasant Street
Fun, Lois Isabelle	Holyoke	492 High Street, Holyoke
Gale, Shirley	Marblehead	Adams House
Gates, Ralph Bailey	Barre, Vt.	Kappa Sigma
George, Murray Winter	Wrentham	Alpha Gamma Rho
Gleason, Phyllis Ann	Springfield	Adams House
Goldsmith, Sylvia Shirley	Springfield	Adams House
Goodhue, Frederick Wells	Haydenville	84 Pleasant Street
Gordon, Barbara Ramona	West Springfield	69 Beverly Hills, West Springfield
Goulding, Estella Caroline	Leicester	Adams House
Grant, Norman Wallace	Lynn	Kappa Epsilon
Graves, Russell Thompson	Northampton	Care of Dr. Lindsey, Mt. Pleasant
Gray, Guy Manning, Jr.	Greenfield	Theta Chi
Gricius, Albert Joseph	Dorchester	Q. T. V.
Gulben, Sandra	Worcester	8 Snell Street
Guralnick, Walter Charles	Roxbury	Alpha Epsilon Pi
Hallowell, Elmer Winston	Greenfield	North College
Hanson, John Francis	Medford	16 North Prospect Street
Hardy, Erving Douglas	Worcester	Kappa Sigma
Harris, Lawrence Keith	Salem	4 Nutting Avenue
Hart, Raymond Lewis	Lynn	53 Lincoln Avenue
Hartin, Forrest Dana	Maynard	Colonial Inn
Healey, Emily Madeline	Easthampton	Adams House
Higgins, Kenneth Raymond	Fall River	Lambda Chi Alpha
Hobart, Merrill Spinney	Needham	North College
Hodder, Walter James	Belmont	22 Sunset Avenue
Holdsworth, Robert Powell, Jr.	Amherst	49 Amity Street
Hopkins, Sarah Huntington	Orleans	113 Main Street
Houghton, Leroy Kingsbury, Jr.	West Roxbury	Care of Dr. Alexander
Howard, Harlan Arnold	Amherst	200 North Pleasant Street
Iacovelli, Henry Nicholas	Milford	Q. T. V.
Ingalls, Allan Southworth	Methuen	Kappa Sigma
Irvine, Kenneth Colwell	Worcester	Theta Chi
Jackson, Edith Lillian	Middleboro	Lambda Delta Mu
Johnson, Byron Taylor	Danbury, Conn.	Care of Mrs. Allen, Old Town Road
Johnson, Lawrence Sterling	Springfield	Alpha Sigma Phi
Johnson, William Vialle	Kendall Green	Theta Chi
Jordan, Raymond Benedict	Revere	Phi Sigma Kappa
Joyce, Dorothy Mary	Amesbury	Lambda Delta Mu
Kabat, John	Hatfield	Alpha Sigma Phi
Keck, Barbara Knox	Boylston	Adams House
Kennedy, Joseph George	Boston	Q. T. V.
Kewer, William Frank	Dorchester	Phi Sigma Kappa
Kinsman, Ruth	Roxbury	Sigma Beta Chi
Klibanoff, Samuel Raymond	Springfield	83 Pleasant Street
Knowlton, Richard Berry	Malden	Davenport Inn
Koch, Harry Fredrick	Greenfield	Sigma Phi Epsilon
Kuc, Rudolph William	Holyoke	84 Pleasant Street
Kuklewicz, Frank Peter	Turners Falls	179 Avenue A, Turners Falls
Kushlan, Henry Shoub	Dorchester	1 College Avenue
Kyle, Laurence Harwood	Huntington	Kappa Epsilon
Landers, John Edward	Holyoke	134 Westfield Road, Holyoke
Lannon, Dorothy Elizabeth	Holyoke	19 Phillips Street
Lapham, Wendell Edward	Carlisle	Lambda Chi Alpha
Layton, Philip Dumaresq	West Newton	Thatcher Hall
LeClair, Ivan Narcisse	Southbridge	66 Lincoln Avenue
Leighton, William Ames, Jr.	Auburndale	Theta Chi
Lerner, Morris	Springfield	31 Fearing Street
Lilly, Max	Malden	East Pleasant Street
Lipman, Leo David	Springfield	Eames Avenue
Ludwin, Isadore	Malden	Hawthorne Farm
Machmer, Katharine Louise	Amherst	25 Amity Street
Maguire, Thomas Joseph	Haverhill	72 Lincoln Avenue
Marble, Ward Henry	Athol	101 Pleasant Street

Marciniak, Emil	Easthampton	19 Fearing Street
McMahon, Helena Clare	Brighton	Phi Zeta
McMahon, Thomas Francis	Brighton	Phi Sigma Kappa
McNally, Edmund James	Palmer	36 Park Street, Palmer
McNally, John Edmund	Springfield	Stockbridge Hall
Meyers, Charles Harold	Greenfield	North College
Milne, George MacLean	Lexington	Kappa Epsilon
Minott, Ivan Charles, Jr.	Greenfield	Box 524, Greenfield
Minzner, Raymond Arthur	Lawrence	35 Lincoln Avenue
Monroe, Lucille Amelia	Southbridge	Sigma Beta Chi
Moody, Gordon	Amherst	30 Sunset Avenue
Moore, Joy Emma	Leeds	2 Allen Street
Moseley, Walter Benjamin	Agawam	Lambda Chi Alpha
Moss, William Henry	Fairhaven	Kappa Epsilon
Newcomb, Elliott Houghton	Orange	Kappa Epsilon
Nice, Barbara Stuart	Columbus, Ohio	Adams House
Nogelo, Anthony Joseph	Framingham	3 McClellan Street
Novick, Alfred Louis	Roxbury	Alpha Epsilon Pi
Nowakowski, Joseph Conrad	Easthampton	31 Franklin Street, Easthampton
Okolo, Nellie Mary	Amherst	Care of Prof. Goding, North Amherst
Osborne, Lemuel, Jr.	Tenafly, N. J.	Old Town Road
Peckham, Robert Bishop	West Medford	42 McClellan Street
Perriello, Robert Charles	Dorchester	72 Lincoln Avenue
Peterson, David Allen	Methuen	19 Fearing Street
Pickering, James Aaron	Boston	Thatcher Hall
Planting, Alfred Herbert	Amherst	16 North East Street
Pratt, Roger Kingman, Jr.	Brockton	11 Phillips Street
Priest, Edith Evelyn	Maynard	64 Lincoln Avenue
Provost, Rita Agnes	North Agawam	83 Walnut Street, North Agawam
Raynes, William Augustus, Jr.	Hyde Park	29 Lincoln Avenue
Rice, Lee Wilson, Jr.	Wilbraham	Phi Sigma Kappa
Richards, Prescott Langdon	Florence	44 Maple Street, Florence
Richason, George Robert	Turners Falls	Riverside, Turners Falls
Riggs, Maida Leonard	Grafton	Adams House
Roberts, Louis Everett	Lexington	Phi Sigma Kappa
Rogers, Caroline Rita	Medway	Phi Zeta
Rosberry, Paul Hubbard	Erving	Kappa Epsilon
Ross, Kenwood	Springfield	Lambda Chi Alpha
Rossiter, David Patrick, Jr.	Malden	French Hall
Ruffley, John, Jr.	New Bedford	Kappa Epsilon
Ryan, James Marcus	Needham Heights	67 Lincoln Avenue
Ryer, Robert	South Hadley Center	1 Bridgman Lane, South Hadley Center
Sampson, Henry James	North Westport	Alpha Sigma Phi
SanClemente, Charles Leonard	Milford	31 Fearing Street
Sawinski, Gizela Caroline	Taunton	Sigma Beta Chi
Sheffield, Norman Louis	Enfield	Kappa Sigma
Shiff, Philip Burrell	Duxbury	Care of Wentworth, East Pleasant Street
Silverman, Milton	Malden	Hawthorne's Farm
Simonsen, Walter	Everett	Theta Chi
Sleeper, Harold Anthony	South Groveland	63 East Pleasant Street
Small, Saul	Springfield	33 Allendale Street, Springfield
Smith, Esther Elizabeth	Easthampton	Lambda Delta Mu
Smith, Rodger Chapman	Amherst	West Street
Spear, Philip Janes	Charlemont	Fernald Hall
Spiller, Robert LeRoy, Jr.	Beverly	Phi Sigma Kappa
Stepath, Frances Elizabeth	Springfield	Adams House
Stone, Elinor Leola	Orange	Sigma Beta Chi
Suher, Abraham	Holyoke	6 North Hadley Road
Swan, Edward Parsons, Jr.	Amherst	4 Hallock Street
Swanson, Carl Pontius	Rockport	Durfee Range
Symancyk, Clifford Ernest	Westfield	Kappa Sigma
Talinski, John Joseph	Roxbury	3 McClellan Street
Thacker, Edward Jesse	Winthrop	Kappa Sigma
Thomas, Albert Stetson	Brattleboro, Vt.	26 Fearing Street
Thomas, Francis Joseph	Turners Falls	168 Montague City Road, Turners Falls
Thorndike, Robert William	Lawrence	Phi Sigma Kappa
Thurlow, Donald Frederick	Greenfield	Care of Mrs. Allen, Old Town Road
Todt, Ruth Elizabeth	West Springfield	Sigma Beta Chi
Trombly, Everett Lowe	Indian Orchard	3 Hampden Street, Indian Indian Orchard
Tubiash, Haskell Solomon	Dorchester	9 Phillips Street
Tucker, Donald Kent	Foxboro	Lambda Chi Alpha
Turner, Harvey Gay, Jr.	Andover	Q. T. V.
Tuttle, John Albert	Torrington, Conn.	Care of Mrs. Allen, Old Town Road
Vaill, Phila Kellogg	Monson	30 North Prospect Street
Waldman, James Saul	Springfield	20 Pleasant Street
Warner, Helen May	Sunderland	Care of A. M. Davis, North Amherst
Warner, Louise Isabel	Sunderland	Adams House
Watts, Harold Irving	Amherst	9 High Street
Waxler, Beatrice Rivoli	Holyoke	Adams House
Weaver, Donald Edward	Springfield	Kappa Sigma
West, Eleanor Alice	Sheffield	25½ Pleasant Street

White, Howard Eric	Amherst	Care of Richard Nelson
Whitmore, Edith Lillian	Forestdale	Adams House
Whitney, Ira Bertram	Ludlow	Chapin Street, Ludlow
Whittemore, Frederick Winsor	Canton	Q. T. V.
Widlansky, Myron Albert	Springfield	Phi Lambda Tau
Wilcox, Sarah Clark	Hudson	Lambda Delta Mu
Williams, Sidney	Peabody	7 Allen Street
Wingate, Marian Kay	Fairhaven	Phi Zeta
Wishart, Frederick Joseph	Turners Falls	13 Fourth Street, Turners Falls
Wisnieski, Karol Stanley	South Deerfield	Q. T. V.
Wood, Judith Gail	Weymouth Heights	Adams House
Wood, Ruth Elizabeth	Holyoke	Phi Zeta
Wyman, Raymond	Westfield	President's House
Zuckerman, Arthur Jacob	Pittsfield	North College
Zukel, John William	Northampton	55 Fort Street, Northampton

CLASS OF 1938.

Adams, Crawford William	Springfield	10 Nutting Avenue
Adams, George Bruce, Jr.	Springfield	4 Allen Street
Alcorn, Robert Edward	West Springfield	North College
Allaire, Royal Phillip	Northampton	26 Dickinson Avenue, Northampton
Allen, Marshall Bigelow	North Grafton	Theta Chi
Alpert, Myron	Chicopee Falls	North College
Anderson, Carl Edward	Rockport	Sigma Phi Epsilon
Annis, Marjorie Delphine	Greenfield	343 Federal Street, Greenfield
Avery, William Blodgett	Shelburne Falls	North College
Baker, Warren Sears, Jr.	Hanson	Q. T. V.
Ball, Elinor Prescott	Roxbury	52 Lincoln Avenue
Bargfrede, John Frederick	Pearl River, N. Y.	4 Nutting Avenue
Barnard, Lois Anna	Hatfield	67 Main Street, Hatfield
Bartlett, Lewis Kingsley	Holyoke	Lambda Chi Alpha
Barton, Elizabeth Sherwood	South Amherst	25 Spring Street
Barton, Richard Wallace	Amherst	3 Fearing Street
Beaumont, Davis Wortham	Amherst	51 Amity Street
Beaumont, Edgar Sidney	Amherst	51 Amity Street
Becher, Marion Rose	Longmeadow	Lambda Delta Mu
Beckman, Wallace George	Springfield	Alpha Gamma Rho
Belgrade, Harry Louis	Northampton	10 Wilson Avenue, Northampton
Belgrade, Max	Northampton	10 Wilson Avenue, Northampton
Beloin, Mederic Howard	Holyoke	Q. T. V.
Benson, Kenneth Ellis	Winchester	Alpha Gamma Rho
Bergman, William Erving	Shelburne Falls	Phi Lambda Tau
Betts, Nelson Benjamin, Jr.	Valley Falls, N. Y.	
Bianco, Joseph Raymond	North Adams	Sigma Phi Epsilon
Bieniek, Edwin Alexander	Holyoke	9 Ivy Avenue, Holyoke
Binder, Irving	Roxbury	Phi Lambda Tau
Bixby, Ruth Lydia	Sunderland	Sunderland
Blaisdell, Harry Linwood	Greenfield	North College
Blake, Norman Perkins	Malden	83 Pleasant Street
Blomberg, Earl Alfred	Leominster	Q. T. V.
Bloom, Esther Lillian	Springfield	Adams House
Bode, Fred William	Lawrence	35 Lincoln Avenue
Bokina, Carl John	Hatfield	Alpha Sigma Phi
Bolton, James Henry	East Northfield	Pleasant Street
Boron, Bertha Barbara	South Deerfield	South Deerfield
Bozek, Stanley Milton	Easthampton	17 Kellogg Avenue
Bray, Richard Irving	Gloucester	North College
Bray, Warren Clarence	Granby	North College
Broderick, Harold Matthew	Willimansett	Lambda Chi Alpha
Brown, Elinor	Leicester	McClure Street
Brown, Herbert Earl	Ashland	Lambda Chi Alpha
Brox, Frank Arthur	Dracut	Sigma Phi Epsilon
Bullock, William Augustine	Arlington	97 Pleasant Street
Bush, John George	Turners Falls	Stockbridge Hall
Buzzee, Robert Daniel	Easthampton	Kappa Sigma
Carew, Helen Virginia	Monson	22 Fearing Street
Carpenter, Cynthia Ellen	Sterling Junction	2 Allen Street
Carpenter, Lydia Thayre	Amherst	R.F.D. 2
Carr, Frank Fairfield	Medford	83 Pleasant Street
Caruso, Edward Francis	Springfield	38 Pleasant Street
Casey, Arthur Daniel	Franklin	North College
Cederberg, Florence Mildred	Jamaica Plain	Cosby Avenue
Chase, Jessie Josephine	West Springfield	52 Lincoln Avenue
Chase, Philip Batcheller	Springfield	Lambda Chi Alpha
Chmura, Chester	Amherst	9 Hitchcock Road
Clapp, Edward Theodore	Florence	20 Pine Street, Florence
Clark, Norman	Sharon	72 Lincoln Avenue
Collins, Charles Wilson	Medford	15 Fearing Street
Collins, William James	Salem	66 Lincoln Avenue
Conant, Chester Cook	Greenfield	Theta Chi
Cone, Leon Winston	North Brookfield	Alpha Gamma Rho
Corkum, Gladys Martha	Methuen	45 Pleasant Street
Couper, Henry Vincent	Littleton	North College
Coutu, Vernon Francis	Erving	Kappa Epsilon
Crosby, Hilda Crathern	Belmont	Cosby Avenue
Crowell, Stella Ida	Greenfield	Sigma Beta Chi
Curtin, Kathleen Teresa	Tyringham	Adams House
Curtis, Clifford Alvin	Hopkinton	Lambda Chi Alpha

Cushman, Frank Melvin	Malden	7 Nutting Avenue
Czelusniak, Edward William	Easthampton	83 Pleasant Street
Davidson, Albert Alan	Springfield	9 Phillips Street
Denehy, Terence Aloysius	South Hadley Falls	Box 15, R.F.D. 2, South Hadley Falls
Dinan, George Bernard	Wakefield	4 Allen Street
Dolliver, Marguerite Elizabeth	Belmont	Adams House
Dunlop, John Thistle	Chicopee	Lambda Chi Alpha
Dunn, Joseph Francis	Brighton	57 Pleasant Street
Eaton, William	Waltham	Lambda Chi Alpha
Edson, Charles Grant	Springfield	North College
Edson, Theodora Elizabeth	East Braintree	45 Pleasant Street
Eliopoulas, Nicholas Daniel	Haverhill	9 Phillips Street
Elkind, Henry Byron	North Scituate	Alpha Epsilon Pi
Ellegaard, Lloyd Howard	Holyoke	Washington Avenue, Holyoke
Elliott, Charles Edward	Beverly	North College
Emery, Norman Alfred	East Lynn	Kappa Epsilon
Epstein, Walter Nathan	Roxbury	4 Allen Street
Eramo, Alfred	Pittsfield	Alpha Gamma Rho
Evans, Robert Earle	Northampton	21 Summer Street, Northampton
Fagan, Virginia Mary	Holyoke	67 Westfield Road, Holyoke
Fahey, Eleanor Dorney	Winthrop	24 North Prospect Street
Farnsworth, Albert Humphries	Worcester	North College
Feinburg, Robert Sidney	Brighton	83 Pleasant Street
Ferguson, William Bragdon	Ludlow	84 Pleasant Street
Filipkowski, Frances Pola	East Whately	East Whately
Finkel, Jacob	Springfield	3 Algonquin Place, Springfield
Fleming, James Appensellar	Holyoke	Lambda Chi Alpha
Flower, Stanley Allen	Southbridge	North College
Forbush, Alfred	Longmeadow	17 Phillips Street
French, Cyrus Edwin	West Roxbury	Theta Chi
Gage, Robert Wilcox	Needham	34 North Prospect Street
Gaskell, Elizabeth Frances	South Deerfield	McClure Street
Gemme, Lillian Edith	Stoughton	52 Lincoln Avenue
Gibbs, Berthier Lyman	Saugus	5 Baker Lane
Giddings, Lane	Great Barrington	83 Pleasant Street
Gieringer, Eugen Pierre	Cambridge	Kappa Sigma
Gilbert, Ann Louise	Belmont	Care of Mrs. Morley, East Pleasant Street
Gill, Joseph Stanley	Bondsville	Bondsville
Glass, Edward Hadley	Lexington	Kappa Epsilon
Gleason, Robert Patrick	Northampton	82 Massasoit Street, Northampton
Goldman, Abraham Bernard	Dorchester	56 Pleasant Street
Golub, Samuel Joseph	East Longmeadow	Care of Mr. Everson
Graham, William Butterworth	North Andover	Q. T. V.
Graves, Julia Tice	Sunderland	Sunderland
Green, Walter Albert	Lynn	Farview Way
Gruner, Saul George	Pittsfield	56 Pleasant Street
Guenard, George Henry	Dracut	Baker Lane
Gunn, Kenneth Bradford	Southampton	Southampton
Hadro, Gertrude Josephine	Easthampton	2 Allen Street
Halpern, Herbert Milton	Holyoke	Phi Lambda Tau
Handverger, Edward	West Medway	North College
Harris, Marjorie Eulala	Leominster	Adams House
Harrison, William Hughes	Lawrence	North College
Haskins, Philip Hanley	Williamstown	84 Pleasant Street
Hauck, Russell John	Norwood	Kappa Sigma
Heller, Saul	Roxbury	66 Lincoln Avenue
Hemond, Conrad Joseph, Jr.	Holyoke	43 Pearl Street, Holyoke
Hemond, Harold Crean	Holyoke	43 Pearl Street, Holyoke
Higgins, Edward William	Arlington	Phi Sigma Kappa
Hoar, John Sherman	Amherst	33 East Pleasant Street
Hooker, Leland Worthington	Springfield	83 Pleasant Street
Hurwitch, Benjamin Gordon	Dorchester	Phi Lambda Tau
Ingram, Ralph	Falmouth	North College
Irving, Richard Randlett	Methuen	Kappa Sigma
Jackson, Mitchell Irving	Fairhaven	Phi Lambda Tau
Jacobson, Seymour Theodore	Springfield	31 Fearing Street
Jefferson, Ruth Reta	West Springfield	660 Main Street, West Springfield
Jenkins, Doris Wynne	Shrewsbury	24 North Prospect Street
Johnson, Herbert Harry	Roslindale	Theta Chi
Judd, Kirtley Leverett	Springfield	North College
Julian, Carol	Amherst	4 Farview Way
Julian, Eleanor Burton	Amherst	4 Farview Way
Kaplinsky, Martha Dorothy	Holyoke	4 Cosby Avenue
Katzeff, Julian Herman	Brookline	4 Allen Street
Kelley, Thomas Francis	Waltham	Lambda Chi Alpha
Kenyon, Marieta Gibson	East Douglas	12 North East Street
King, Richard Coleman	Newtonville	Theta Chi
Kingsbury, Frank William[1]	Sterling	10½ Kellogg Avenue
Kingsbury, Helen	Sterling	2 Allen Street
Kinsman, Jessie	Roxbury	Sigma Beta Chi
Klaucke, Rowland	Worcester	Alpha Gamma Rho
Klayman, Maxwell Irving	South Boston	North College
Knight, Walter Storrs	Ludlow	Alpha Gamma Rho
Kodis, Ruth Elinor	Leicester	4 Cosby Avenue

[1] Candidate for degree of Bachelor of Vocational Agriculture.

Koehler, Dorothy Lillian	Greenfield	Adams House
Kohn, Bernard Lester	Roxbury	Alpha Epsilon Pi
Lamb, David Allison	South Hadley	5 Burnett Avenue, South Hadley
Lavrakas, John	Watertown	North College
Lee, James Donovan	Chester	86 Pleasant Street
Levinson, Lawrence	Arlington	7 Allen Street
Liljegren, Solveig Utne	Wollaston	13 Fearing Street
Linden, Norman Elliott	Everett	15 Fearing Street
Lindstrom, Frederick Burgess	Palmer	14 Rockview Street, Palmer
Little, Melvin Theodore	East Weymouth	North College
Lombard, Elmer Ralph	Pittsfield	North College
Lombard, Gardner Cromwell	Danvers	Theta Chi
Lonergan, William Francis, Jr.	Springfield	Sigma Phi Epsilon
Luce, Clifford Norton	Worcester	86 Pleasant Street
Lyon, Frank Merton	Hamden, Conn.	Theta Chi
Lyons, Robert Stephen	Springfield	Lambda Chi Alpha
Mabie, Richard Lockwood	Sharon	9 Phillips Street
MacCurdy, Robert Douglas	Watertown	11 Phillips Street
Macomber, Louis Rogers	Fairhaven	Sigma Beta Chi
MacPhail, William Anderson	North Plymouth	Kappa Sigma
Mann, Lillian Russell	Westfield	2 Allen Street
Mayko, Walter Charles	Holyoke	7 Nutting Avenue
McGowan, Donald Sanford	Holyoke	320 Pleasant Street, Holyoke
Meyer, Frederick John	South Hadley	South Hadley
Mildram, David Elliot	Greenwood	4 Allen Street
Milkey, Elaine Helen	Montague City	McClure Street
Millard, Carol Frances	Segreganset	61 Lincoln Avenue
Mish, Edward Theodore	South Hadley Falls	North College
Mitchell, Walter Kimball, Jr.	Newton Highlands	33 Lincoln Avenue
Morgan, Louise Dora	North Wilbraham	North Wilbraham
Morley, Frances Lillian	Amherst	East Pleasant Street
Morrison, Robert Karl	Pittsfield	North College
Moult, Roy Hepworth	Lynn	Kappa Epsilon
Munson, Edward Malcolm, Jr.	South Dartmouth	54 Lincoln Avenue
Munson, Willard Squier	Amherst	101 Butterfield Terrace
NeJame, Mitchell Francis	North Adams	50 Pleasant Street
Nelson, Phyllis Louise	Arlington	Care of Mr. Gaskell
Newman, Edward George	North Brookfield	Kappa Sigma
Niden, George	Needham	North College
Nolan, Kenneth Gordon[1]	Danvers	Alpha Sigma Phi
Noonan, William George	Haverhill	83 Pleasant Street
O'Brien, George Edward	Northampton	148 Crescent Street, Northampton
O'Connell, Mary Patricia	Wakefield	Care of Mr. Gaskell
O'Hearn, Helen Esther	Cambridge	13 Fearing Street
Olivier, James Barnes	Holyoke	Kappa Sigma
Osley, Donald	Hatfield	Alpha Sigma Phi
Page, Alfred Sylvester	South Amherst	Shay Street
Parker, Evelyn Maude	Orange	44 Triangle Street
Perkins, Robert Cowan	Worcester	Phi Sigma Kappa
Perry, Walter Holden	North Andover	Phi Sigma Kappa
Phillips, Barbara Sanborn	Greenfield	25 Shattuck Street, Greenfield
Pond, Virginia Mabel	Greenfield	12 Miles Street, Greenfield
Putnam, Paul Sears	Greenfield	Care of Prof. Snyder, North Amherst
Pyenson, Max	Otis	Alpha Epsilon Pi
Quast, Wentworth	Natick	31 Fearing Street
Randall, Sylvia Arline	Granby	44 Pleasant Street
Randlett, Horace Hillman	North Wilbraham	North Wilbraham
Rathbone, Frances Bullard	Haverhill	8 Allen Street
Rice, John Edward, Jr.	Marlborough	117 Butterfield Terrace
Rice, Theodore Albert	Wellesley	North College
Riel, Francis James	Turners Falls	East Experiment Station
Riel, Frederick Charles	Turners Falls	East Experiment Station
Riley, William Charles	Holyoke	66 Lincoln Avenue
Roberge, William Edward	Westfield	Sigma Phi Epsilon
Rosenbloom, Charles	Holyoke	19 Pleasant Street
Rounds, Dean Leonard	Reading	26 Fearing Street
Rozwenc, George Stephen	Northampton	5 Franklin Court, Northampton
Rustigian, Robert	Medford	15 Fearing Street
Rutter, Louise Baldwin	Waltham	McClure Street
Ryer, George Isley	South Hadley	1 Bridgman Lane, South Hadley Center
Sannella, Lee Sherman	Springfield	North College
Savage, James Harvey	Lynnfield Center	North College
Scace, Elizabeth Terry	Pittsfield	Alpha Lambda Mu
Schneider, Philip Treen	Palmer	11 Phillips Street
Schopfer, Jane Elizabeth	Worcester	Lambda Delta Mu
Seal, Ethel Frances	Worcester	2 Allen Street
Shaw, Marion	Belchertown	Adams House
Sherman, Frank Richmond	Lanesboro	Lambda Chi Alpha
Sievers, Frederick John	Amherst	Lincoln Avenue
Silverman, Donald Lawrence	Roxbury	1 Phillips Street
Silverman, Stephen Israel	Milton	3 Nutting Avenue
Sinclair, John Merrill	Northampton	33 Prince Street, Northampton
Slesinski, Frank Alphonse	Northampton	Box 27, North Amherst

[1] Candidate for degree of Bachelor of Vocational Agriculture.

Slocomb, Jack Tibbets	Brockton	Sigma Phi Epsilon
Smardon, Philip	Portland, Maine	17 Phillips Street
Smith, Russell Eaton	Lawrence	Alpha Sigma Phi
Snow, Phyllis Maude	Brockton	Adams House
Snyder, Harry Miles	Arlington	President's House
Spaight, Kathryne Ida	Feeding Hills	Lambda Delta Mu
Sprague, Edna Angie	Hamilton	Adams House
Stewart, Christine Alan	Boylston	Lambda Delta Mu
Streeter, Mary Elizabeth	Holyoke	24 North Prospect Street
Strode, Barbara Jeanette	Marblehead	East Pleasant Street
Swiren, Alfred Milton	Springfield	North College
Taft, Emma Mather	Mendon	13 Fearing Street
Tannebaum, Leo Wolf	Roxbury	7 Phillips Street
Taylor, Winnifred Hope	Pittsfield	19 Phillips Street
Tetreault, Herbert Arthur	Northampton	Care of Dr. Lindsey, Mt. Pleasant
Thayer, Edith Gwendolyn	West Bridgewater	24 North Prospect Street
Thompson, Elthea	Gardner	Care of Mr. Gaskell
Tindale, John William	South Hanover	North College
Tonkin, Maurice	Revere	34 McClellan Street
Towle, Richard Washburn	Cohasset	President's House
Towne, Louisa Elsie	Norfolk	24 North Prospect Street
Townsley, Floyd Wayne	Ashfield	Lambda Chi Alpha
Valvanis, Nicholas John	Haverhill	4 Allen Street
Villaume, Osgood Louis[1]	Malden	Alpha Gamma Rho
Walkey, Delia Roberta	South Hanson	Care of Mrs. Gaskell
Welcker, William Fuller	Holyoke	26 Fearing Street
Wheeler, James Francis	Natick	27 Fearing Street
White, Martha	Boston	30 North Prospect Street
Whitney, Jean	Worcester	Lambda Delta Mu
Whitney, Walter Augustus, Jr.	Ashfield	Ashfield
Wiggin, Stanley Hopkins	Newton Center	Alpha Gamma Rho
Wilson, Margaret Dorothy	Holyoke	69 Sycamore Street, Holyoke
Winblad, Fritz Albert Sigfrid	Chelmsford	Q. T. V.
Wood, Douglas James	Florence	97 Chestnut Street, Florence
Wood, Lois Virginia	West Upton	13 Fearing Street
Wood, Ruth Elizabeth	Springfield	8 Allen Street
Woodin, Marjorie Helena	Millers Falls	Draper Hall
Youngren, Clare Pauline	Orange	Lambda Delta Mu

CLASS OF 1939.

Alexion, Alexander	Fairhaven	Care of Mrs. Howard, Pleasant Street
Alfieri, Mario Paul	Amherst	33 Cottage Street
Allen, Robert Searle	Westfield	Thatcher Hall
Allen, Willis Edwin	Springfield	Thatcher Hall
Andersen, Henry Gardner	Newton Center	Thatcher Hall
Anderson, Rita	Easthampton	61 Northampton Street, Easthampton
Auerbach, Milton Edward	Springfield	Thatcher Hall
Avery, Rexford Hanson	Shrewsbury	Theta Chi
Balcom, John Murray	Quincy	Thatcher Hall
Barké, Harvey Ellis	Plymouth	Thatcher Hall
Barrett, William Francis	Adams	Thatcher Hall
Bartlett, Lawrence Matthews	Medford	Thatcher Hall
Beck, Sidney Harold	Malden	North College
Becker, Clyde Lynton	South Harwich	Thatcher Hall
Bemben, John	Hadley	East Street, Hadley
Benjamin, George Cobb	Lee	Thatcher Hall
Bennas, James George	Amherst	29 Main Street
Bettoney, Stanley	Stoughton	Thatcher Hall
Bischoff, George Herman	Holyoke	113 Westfield Road, Holyoke
Bixby, Lawrence Hubbard	Sunderland	Sunderland
Blassberg, Irving	Turners Falls	Thatcher Hall
Boice, Sidney Miller	Egremont	North College
Booth, Mabelle	Foxboro	Adams House
Bourque, Wilfred Albert	South Hadley Falls	Lathrop Street, South Hadley Falls
Bowler, Richard Norman	Westfield	Thatcher Hall
Bradley, Geraldine Irene	Amherst	48 Pleasant Street
Branch, Charles Leland	Amherst	8 Dana Street
Brett, Pauline Jean	Duxbury	Draper Hall
Briggs, Beryl Frances	Ashburnham	Birch Lawn
Brisset, Pauline Amelia	Holyoke	Adams House
Broadfoot, Arthur David	Amherst	130 Pleasant Street
Brody, George	Roxbury	Thatcher Hall
Brown, Donald Emerson	Beverly	Thatcher Hall
Buckley, Rita Marie	Beverly	Draper Hall
Burgun, Philip Eugene	Canton	11 Phillips Street
Burke, Rosamond Margaret	Beverly	Adams House
Burnett, Karl Henry	Feeding Hills	Feeding Hills
Cadigan, Donald Winslow	Greenfield	North College
Cain, Robert Emery	Conway	Thatcher Hall
Calo, Donald	Flushing, N. Y.	Thatcher Hall
Carp, Abraham	Boston	Thatcher Hall
Cassidy, Charles William	Framingham	Thatcher Hall
Cassidy, Wellington Elmer	North Andover	Thatcher Hall
Chaffee, Edna Merrill	Rehoboth	Adams House
Chapin, Ronald Hale	Greenfield	21 Linden Avenue, Greenfield

[1] Candidate for degree of Bachelor of Vocational Agriculture.

Christie, Charles Frederic	Malden	North College
Ciereszko, Leon Stanley	Holyoke	Thatcher Hall
Clapp, Elizabeth May	Springfield	Adams House
Cohen, Kenneth	Lynn	Thatcher Hall
Colby, Julia Blanche	Holyoke	Adams House
Cole, Robert Salisbury	Westfield	Thatcher Hall
Cole, Roger Martin	Marblehead	Thatcher Hall
Colgate, Doris	Billerica	Adams House
Cooper, Grace Battell	Stockbridge	Adams House
Copeland, Lloyd Bardwell	Colrain	10 Kendrick Place
Copeland, Marjorie Louise	Colrain	10 Kendrick Place
Cordes, Vivian Ernestine	Agawam	Adams House
Cousins, Ivan Roper	Greenfield	110 Franklin Street, Greenfield
Cowles, Donald Harry	Brighton	Thatcher Hall
Cox, William Hayward	Bridgewater	Thatcher Hall
Crosby, Justina Cotta	Newton Centre	Adams House
Crowley, Shelagh Agnes	West Springfield	Adams House
Curtis, Eleanor Savel	Worcester	Adams House
Czajkowski, Mildred Ann	Amherst	R.F.D. Box 88
Daly, Henry Lincoln	Turners Falls	Thatcher Hall
Damon, Marjorie Eva	Haydenville	Adams House
Davenport, Beatrice Louise	Mendon	13 Fearing Street
Decker, Roger Herman	Westfield	Thatcher Hall
Degraff, Raymond Alphonse	Holyoke	North College
Dimock, Edgar Wellwood	Oxford	Thatcher Hall
Dixon, Ethel Winnifred	Leverett	Leverett
Doherty, Joseph Anthony	Revere	Thatcher Hall
Donahue, Charlotte Lee	Newton Lower Falls	Draper Hall
Donoghue, Joseph Patrick, Jr.	Newburyport	116 Pleasant Street
Doolan, Michael Charles	South Deerfield	43 Elm Street, South Deerfield
Dorman, Kenneth Ronald	Gilbertville	North College
Doyle, Mary Rita	Holyoke	18 Lynwood Avenue, Holyoke
Duval, Russell Edward	North Adams	Thatcher Hall
Dyer, Doris Hopkins	Saugus	Adams House
Eaton, Elizabeth Dockham	Holyoke	Summer Street, North Amherst
Edwards, John Raymond	West Townsend	Thatcher Hall
Eldridge, Eva Margaret	South Yarmouth	Adams House
Eldridge, Everett Warner, Jr.	Palmer	Thatcher Hall
Elliott, Richard Duncan	Winchester	Thatcher Hall
Enright, Thomas Joseph	Pittsfield	Thatcher Hall
Esson, Marjorie Harrold	Dorchester	Adams House
Estabrook, Frederick Dickinson	Florence	Care of Mrs. Mitten, Dana Street
Fanning, Francis Thomas	East Milton	Care of Mr. Nestle, Triangle Street
Fanning, Paul Richard	East Milton	Care of Mr. Nestle, Triangle Street
Farren, Francis John	Adams	Thatcher Hall
Fay, Gertrude Hagar	Chicopee Falls	Draper Hall
Fay, Leo Daniel	Boston	North College
Featherman, Maurice	Natick	Thatcher Hall
Ferriter, Paul Thomas	Westfield	Thatcher Hall
Fisher, Myer	Winthrop	Thatcher Hall
Fitts, Eleanor Frances	Northboro	Adams House
Fitzpatrick, Richard James	Rochdale	Alpha Gamma Rho
Fitzpatrick, William Henry	Amesbury	11 Phillips Street
Flynn, Elizabeth Peer	Belchertown	Belchertown
Foerster, Wilma Ruth	Holyoke	45 Lawler Street, Holyoke
Fogel, Bertram	Roxbury	Thatcher Hall
Fogel, Maurice	Lynn	North College
Fortin, Constance Claire	Holyoke	Adams House
Foster, Ralph Longwell	Colrain	Colrain
Freedman, Arnold Eliot	Roxbury	North College
Freedman, Herman Sumner	Brookline	13 Phillips Street
Galvin, John Joseph	Northampton	5 Edward's Square, Northampton
Garside, William Albert	Stoneham	Thatcher Hall
Geoffrion, Philip Carl	West Springfield	North College
Giles, Richard Alden	Cummington	Thatcher Hall
Glass, Robert Butterfield	Arlington	Birch Lawn
Glick, John Ferol	Amherst	6 North Hadley Road
Glow, Lewis Lyman	East Pepperell	Thatcher Hall
Goldberg, David	Northampton	176 Prospect Street, Northampton
Goldberg, Florence Sylvia	Allston	Adams House
Goldman, Sylvia	Worcester	Adams House
Goode, Frederick Dickinson, Jr.	Auburndale	North College
Gordon, Harold Thomas	Holyoke	71 Center Street, Holyoke
Gould, Kenneth Willard	Millbury	North College
Gove, Chester Allen	Walpole	Thatcher Hall
Grant, Emerson Wallace	Middleboro	Thatcher Hall
Graves, James Oliver	Greenfield	North College
Griffin, Charles William	Holyoke	934 Dwight Street, Holyoke
Gunness, Marion Elizabeth	Amherst	105 Butterfield Terrace
Hall, Bettina	Foxboro	Adams House
Handforth, Thomas Edward	West Medway	9 Fearing Street
Haskins, Robert Bernard	Turners Falls	173 L Street, Turners Falls
Hawthorne, Frank Douglass	South Amherst	South East Street
Haylon, George Joseph	Pittsfield	Thatcher Hall

Haynes, Paul Harlow	Southbridge	Thatcher Hall
Healy, Frank Clifford	Buckland, Conn.	3 Nutting Avenue
Hennessy, Thomas, Jr.	Newton Highlands	83 Pleasant Street
Henschel, Vivian Victoria	Boston	Adams House
Herman, Jeanette	Roxbury	Adams House
Higginbotham, Harold Garland	Worcester	86 Pleasant Street
Hornbaker, David Winford	Worcester	Thatcher Hall
Horwitz, Sumner Lenard	Mattapan	North College
Howe, William Wallace, Jr.	Dalton	Thatcher Hall
Howes, Herbert Shurtleff	Middleboro	Thatcher Hall
Hughes, Fredrick Kenneth	Holyoke	Thatcher Hall
Irzyk, Albin Felix	Salem	Thatcher Hall
Jablonski, Stephen Malcolm	Greenfield	8 Power Court, Greenfield
Jackson, Donald Bolles	Amherst	57 Lincoln Avenue
Jackson, Ira Lee	Fairhaven	Thatcher Hall
Jasper, Elizabeth Shirley	Springfield	Adams House
Jenney, Robert	Brockton	Thatcher Hall
Jensen, Rose Kristine	Worcester	Adams House
Johnson, Lawrence Edward	Holyoke	Thatcher Hall
Johnson, Peter VanBrocklyn	Southboro	Thatcher Hall
Julian, Charles Nelson	Amherst	4 Farview Way
Kaplan, Arthur Milton	Chelsea	Thatcher Hall
Kaplinsky, Anne Fern	Holyoke	Draper Hall
Katz, Coleman	Roxbury	Thatcher Hall
Kaynor, William Kirk	Springfield	Alpha Gamma Rho
Keefe, Mary Margaret	Westfield	Adams House
Kenney, Thomas Curley	Malden	Thatcher Hall
Kenyon, Elizabeth	Weston	Adams House
Kerivan, Katherine Eleanor	Newton Upper Falls	Adams House
Kertzman, Louis	Somerville	North College
Keyes, Edmund Mac	Amherst	North Hadley Road
Kieliszek, Anthony	Easthampton	53 Water Lane, Easthampton
Kilburn, Richard Warren	Longmeadow	Thatcher Hall
King, Herbert Bernard	Dorchester	North College
King, James Sumner	Maynard	Thatcher Hall
Kitson, John Edward	Easthampton	Thatcher Hall
Knott, William Morgan	Groveland	Thatcher Hall
Kokins, Carl Ernest	Ashland	Thatcher Hall
Kosakowski, Stephen Raymond	Amherst	26 Triangle Street
Krowka, Stanley Joseph	Northampton	108 Franklin Street, Northampton
Kruger, Everett Milton	Newton	Thatcher Hall
Landsman, Abraham Ebbie	Dorchester	North College
Lawson, Donald Seabury	Waltham	Thatcher Hall
Leclair, Leopold Joseph	Amherst	11 South Pleasant Street
Lee, Richard Everett	New Bedford	Thatcher Hall
LePage, John Roch, Jr.	Southbridge	Thatcher Hall
Leslie, Walter Robert	Dorchester	North College
Levin, Leonard Maurice	Northampton	35 Maple Street, Northampton
Lippincott, Clifford Ellwood	Lee	Thatcher Hall
Litchfield, Marjorie	Hyde Park	Adams Hall
Luce, Phillips Edward	Framingham	Thatcher Hall
Luchini, Lewis George	Milford	Thatcher Hall
Lyman, Thomas Graves	Easthampton	North College
Lynch, Julia Mary	Westfield	Adams House
MacDonald, Margaret Phyllis	Huntington	Adams House
Madden, Margaret May	Methuen	Adams House
Malkin, Isaac Edward	Chelsea	Thatcher Hall
Manna, John	North Hanover	Thatcher Hall
Marsh, Robert Kendall	Rutland	Alpha Gamma Rho
Maschin, Marian Isabel	Westfield	Adams House
Mayo, Donald Stewart	Framingham	Thatcher Hall
McCowan, William Blake	Worcester	Thatcher Hall
McKinney, William James	Saugus	5 Baker Lane
McMahon, John Francis	Greenfield	4 St. James Court, Greenfield
Meade, Edward Griffin	Dorchester	Thatcher Hall
Meehan, James Ignatius	Lawrence	Thatcher Hall
Meehan, Mary Theresa	Holyoke	Adams House
Mendall, Seaton Crawford	Middleboro	Thatcher Hall
Merrill, Frances Somerville	Raynham Center	Draper Hall
Meurer, Ethel	Springfield	29 Northampton Road
Miller, Alexander Andrew	South Windsor, Conn.	Thatcher Hall
Milne, Douglas Duncan	Lexington	Thatcher Hall
Moore, Harold Emery, Jr.	Sharon	Thatcher Hall
Moorehead, Albert Fulton	Melrose	Thatcher Hall
Morey, Clifton Wentworth	Belmont	Thatcher Hall
Morin, Edward Laurence	Amherst	1 McClure Street
Muller, Robert Harold	Darien, Conn.	Thatcher Hall
Murphy, John Joseph	Lynn	Thatcher Hall
Murphy, Robert Joseph	Springfield	North College
Myerson, Alvan John	Brookline	North College
Najar, Gordon Ellery	Housatonic	Thatcher Hall
Nestle, Shirley Elizabeth	Amherst	Triangle Street
Nichols, Dorothy Elizabeth	Westfield	Adams House
Norwood, Olive Freeman	Worcester	Adams House
Nugent, Eleanor Claire	Holyoke	Adams House
O'Connell, Harry William	Montague	50 Pleasant Street
O'Donnell, Grace Patricia	Westfield	Adams House
Olson, Elizabeth Janet	Manchester	Adams House
Packard, Robert Wesley	Worcester	Thatcher Hall
Page, Tracy Omar	Springfield	Thatcher Hall

Parker, John Alfred	Ashby	Thatcher Hall
Parks, Nancy	Sherborn	Draper Hall
Parmenter, Gerald Murdock	Franklin	Thatcher Hall
Parmenter, Ray Elmer	Franklin	Thatcher Hall
Pastuszak, Peter Paul	Three Rivers	Thatcher Hall
Paul, Joseph	Northampton	359 Bridge Street, Northampton
Pereira, George Anthony	Holyoke	Thatcher Hall
Phelps, Ellsworth, Jr.	Northampton	Thatcher Hall
Pickard, Laurence Kent	Salisbury	Thatcher Hall
Podolak, Stanley	Easthampton	17 Kellogg Avenue
Poole, William Lawrence	South Sudbury	Thatcher Hall
Powers, Richard Lyman	West Springfield	North College
Pratt, John Jacob	Cohasset	Thatcher Hall
Prescott, Paul William	Rutland	Thatcher Hall
Purnell, Frederick J.	Amherst	2 Tyler Place
Pushee, Virginia	North Amherst	North Amherst
Raiklen, Hyman Isaac	Boston	9 Phillips Street
Randall, Bertha Ann	Springfield	Draper Hall
Reade, Irvin Douglass, Jr.	Whitman	North College
Reed, Ralph Herbert	Northfield	Thatcher Hall
Reid, Virginia Margret	Bayport, L.I., N. Y.	Adams House
Reiser, Milton Paul	Malden	North College
Reisinger, Ray Richard	Amherst	29 Northampton Road
Richardson, Eunice Moore	Baldwinville	Adams House
Richmond, Blanch	Mattapan	Adams House
Roberts, Everett [1]	Quincy	Thatcher Hall
Rodda, Charles, Jr.	Springfield	Thatcher Hall
Rogosa, Mary	Lynn	Adams House
Rose, Harold Davies	Medford	North College
Rosenthal, Morris	West Springfield	Thatcher Hall
Sanborn, Lee Lawrence	Holyoke	North College
Sangster, Donald Lincoln	Holyoke	2 Francis Avenue, Holyoke
Sannella, Joan Rosina	Springfield	Adams House
Scaltrito, Nancy Veronica	Jamaica Plain	Summer Street, North Amherst
Scarborough, Muriel Elaine	Newton	Adams House
Schmidt, Vincent Raymond	New Bedford	Thatcher Hall
Scholz, Evi	State Line	Thatcher Hall
Schwartz, Charles	Roxbury	Thatcher Hall
Schwartz, Ernest	Springfield	Thatcher Hall
Sedoff, Bernice	Winthrop	Adams House
Sheehan, Eleanor Louise	Holyoke	Adams House
Shevenell, Ella Gertrude	Groveland	Adams House
Shipman, Lee Charles	Worcester	Thatcher Hall
Sinclair, Belva Marie	Northampton	33 Prince Street, Northampton
Slater, Charles Edward	Tyringham	North College
Smart, Raymond Elmer, Jr.	Amherst	67 East Pleasant Street
Smith, Francis Eliot	Arlington	Thatcher Hall
Smith, Priscilla Murdock	Spencer	Adams House
Smith, Robert Allison	Stow	Thatcher Hall
Snow, Bethany Parker	West Roxbury	Adams House
Solar, Philip	Lynn	Thatcher Hall
Southwick, Franklin Wallburg	White Plains, N. Y.	Thatcher Hall
Spelman, George Joseph	Amherst	15 Fearing Street
Spofford, Inez Evelyn	Bradford	Adams House
Stafford, Milton Alexander	Northampton	Thatcher Hall
Stanisiewski, Frank Raymond	Amherst	Triangle Street
Stawiecki, Edmond Joseph	Dudley	Thatcher Hall
Steff, Howard Newton	North Dartmouth	Thatcher Hall
Steinberg, Jacob	Chelsea	Thatcher Hall
Stetson, Courtney, Jr.	East Templeton	Thatcher Hall
Stoddard, Edward Forrest	Framingham	Thatcher Hall
Stomberg, Marion King	Florence	56 South Street, Florence
Stone, Frank Manly	Boston	Thatcher Hall
Stone, Norman Edward	Newton Centre	North College
Stratton, Charles William	Lee	Thatcher Hall
Sullivan, Arthur Ellis	Palmer	Thatcher Hall
Suomi, Martti Ilmari	Wellfleet	Thatcher Hall
Swanson, Robert Warren	Rockport	Thatcher Hall
Tappan, David Scott	Boston	Thatcher Hall
Thomas, Gordon Franklin	East Bridgewater	Thatcher Hall
Thomas, Norman Taylor, Jr.	Marblehead	Thatcher Hall
Todd, Pauline Janice	Wilmington	Adams House
Townsend, John Vincent	South Hadley	Thatcher Hall
Truran, Margaret Elizabeth	Stockbridge	Adams House
Turner, Rodney Charles	Falmouth	Thatcher Hall
Ullman, Robert Edgerton	Northampton	81 Harrison Avenue, Northampton
Valentine, Wilna Gordon	Northboro	Adams House
Vittum, Morrill Thayer	Ward Hill	Thatcher Hall
Waddell, Ruth Eugenie	Arlington	Adams House
Wakefield, Walter Thompson	Worcester	North College
Waldman, Jack	Irvington, N. J.	North College
Walker, Isabelle Pettigrew	South Hadley Center	127 College Street, South Hadley Center
Walsh, James Raymond	Brockton	19 Fearing Street
Ward, Eleanor	Springfield	Adams House
Warner, Elizabeth Rose	Sunderland	Adams House

[1] Candidate for degree of Bachelor of Vocational Agriculture.

Warren, Francis Albert	Ashfield	Thatcher Hall
Welch, Ervin Leonard	Melrose	Thatcher Hall
West, Mary Lees	New Bedford	Adams House
West, Orrin Eugene	Edgartown	Thatcher Hall
Whitcomb, Marciene Ramsdell	South Hadley Falls	Thatcher Hall
White, Ralph Wilfred	Brighton	Thatcher Hall
Whitney, Julie Mead	Orange, Conn.	Adams House
Wilcock, Thomas John [1]	New Bedford	Thatcher Hall
Wilcox, Edmund Gillette	Stockbridge	North College
Wilcox, Marjorie Frances	Pittsfield	Adams House
Wildes, Horace Bradstreet	Dartmouth	Thatcher Hall
Wilke, Gerhard Max	Holyoke	600 Canal Street, Holyoke
Willard, Edward Buck	Wollaston	Thatcher Hall
Wilson, Elliot Tilden	Weymouth	Thatcher Hall
Wilson, Merton Frederick	South Hadley Falls	5 Allen Street
Wintman, Melvin	Chelsea	Thatcher Hall
Wirtanen, Leonard Charles	Quincy	Thatcher Hall
Witek, John Joseph	Greenfield	55 Colrain Street, Greenfield
Wojcieszek, Celia Mary	Ware	Draper Hall
Wojtasiewicz, Henry	Chicopee	Thatcher Hall
Yourga, Frank John	Greenfield	Thatcher Hall
Zajchowski, Walter Andrew	Chicopee	Thatcher Hall
Zaskey, Lucy Anna	Amherst	R.F.D.
Zelazo, Stanley Frank	Adams	Thatcher Hall

SPECIAL STUDENTS.

Bennett, Marjorie Adeline	Amherst	6 Snell Street
Burke, James William	Amherst	24 Lessey Street
Gould, Howard Duff	Plainfield	Plainfield
Parsons, Helen B.	Amherst	M. S. C.
Sullivan, William C.	Bolton	86 Pleasant Street

STUDENTS REGISTERED AFTER CATALOGUE FOR 1934–1935 WAS PUBLISHED.

1937.

Dodge, Albert Winslow	Wenham
Lewis, Walter Frederic [1]	Andover
Liberfarb, Sidney	Boston

1938.

Polhemus, Tabor Wells	East Northfield

SPECIAL STUDENTS.

Rotherham, Richard Clarence	Revere
Muir, Muriel Rowden	Shelburne Falls

SUMMARY BY CLASSES.

Class	Men	Women	Total
1936	153	68	221
1937	176	63	239
1938	198	78	276
1939	239	89	328
Specials	3	2	5
	769	300	1,069

GEOGRAPHICAL SUMMARY.

Massachusetts	1,043	Maine	1
Connecticut	9	Ohio	1
New York	8		
New Jersey	4	Total	1,069
Vermont	3		

[1] Candidate for degree of Bachelor of Vocational Agriculture.

STOCKBRIDGE SCHOOL OF AGRICULTURE.

Graduates, 1935.

Hartwell Brown Abbot	Andover
Wesley Martin Ball	Wakefield
Stanley Frank Barnes	Marlboro
Luther Henry Barstow, Jr.	South Hadley
Michael Edward Bemben	Hadley
Walter John Bobowiec	Three Rivers
Richard Caton Broughton	South Wellfleet
Alexander Malcolm Campbell	South Boston
Fred Nelson Carter	Hanson
George Charles Cassidy	Framingham
Carl Stuart Chaney	Dunstable
Robert James Clark	Groton Long Point, Conn.
James Underwood Crockett	Haverhill
Darrell Frayne Cunningham	Medfield
Henry Willard Davidson	Longmeadow
Francis Paul Dolan	Brighton
Samuel Toby Douglas, Jr.	Waban
Elizabeth Vileria Flint	Westhampton
Malcolm Randall Fobes	Northampton
Douglas Wilmont Forrest	Spencer
Malcolm Dickinson Frink	Northampton
Frank John Hanieski	North Amherst
Allen Seely Harlow	Newport, R. I.
George Emile Hochstrasser	South Weymouth
Gordon Nelson Holt	Worcester
Hermeana Eleanor Hopkins	Reading
Merrill Hunt, Jr.	Cincinnati, Ohio
Grace Arline Jacobs	Dudley
Alphonse Paul Juhnevicz	Worcester
Herbert Amos Kimball	Haverhill
William Penn Macomber, Jr.	Portsmouth, R. I.
Raymond Lawrence Mutter	Easthampton
John Edmund Nichols	Greenfield
Chester Howard Niles	Bellows Falls, Vermont
Frederick William Noonan	Vergennes, Vermont
Ralph Boothby Nourse	Sterling Junction
John Pena	West Falmouth
Rocco Pepi	Framingham
John Uno Pera	Fitchburg
Kenneth Frank Prentiss	Hubbardston
George Osgood Putnam	Andover
Albert Laurence Ratté	Andover
Donald Arthur Regan	East Boston
Warren Alvan Riley	Tyngsboro
Guilbert Leon Ross	Montague
Lester Charles St. Jean	Northampton
Russell Francis Sears	Plymouth
Gordon Harvey Shortsleeves	Worcester
Converse Burr Smith	Waltham
Wilbur Clark Stocking	Simsbury, Conn.
James Otis Thorndike	East Bridgewater
Ralph Waldo Tripp, Jr.	Westport
Lawrence Alden White	New Bedford

As of the Class of 1934.

Margaret Adele Clancy	Dedham
Philip Adam Caie Craig	Barre, Vermont

Registration.

Class of 1936.

Adams, Robert William	Housatonic	97 Pleasant Street
Allen, Edward Howes	South Hadley	20 Pleasant Street, Fire Department
Allen, Fred Henry	Leominster	North Pleasant Street, Care Mrs. Haskins
Alton, Kenneth Walker	Webster	73 Pleasant Street, Kolony Klub
Anable, Fred Asher	Westboro	73 Pleasant Street, Kolony Klub
Bailey, Norman Sprague	Newton Centre	13 Hallock Street
Barry, Lawrence Francis	Roslindale	15 Cottage Street
Beekman, Fenwick, Jr.	Katonah, New York	75 Pleasant Street, A.T.G.
Bishop, Frank Sanford	Springfield, Vermont	75 Pleasant Street, A.T.G.
Blackmer, Randolph Clayton	Hardwick	9 Phillips Street
Bossardt, Robert Edward	Winchendon	7 Nutting Avenue
Bransford, John Emerson	Patchogue, New York	16 Hallock Street
Brown, Edward Thomas	Marblehead	97 Pleasant Street
Bryant, Walter Monroe	Hyde Park	33 Northampton Road
Buell, Kenneth Hyland	Petersham	73 Pleasant Street, Kolony Klub
Carlson, Harold Frederick	Brighton	75 Pleasant Street, A.T.G.
Carlson, Hugo Ernest Theodore	West Roxbury	8 Beston Street
Chace, Alfred Martin	South Dartmouth	75 Pleasant Street, A.T.G.
Chapin, Robert Armstrong	Sheffield	73 Pleasant Street, Kolony Klub
Christensen, Nelson Christian	Wilson, Conn.	Chestnut Street, care of Mrs. Hauff

Cooley, Ralph Dimock	West Granville	10 McClellan Street
Corkum, Harold Whitman	Sutton	5 East Pleasant Street
Cornell, Pardon Wing	North Dartmouth	8 Nutting Avenue
Davenport, Alfred Mortimer, Jr.	Watertown	73 Pleasant Street, Kolony Klub
Davis, Russell Burdette	North Westport	6 Nutting Avenue
Dodge, Ellison Dwight	Belchertown	Belchertown
Donovan, John Gerad	Cohasset	15 Cottage Street
Doty, William Ely	West Springfield	73 Pleasant Street, Kolony Klub
Douty, Lloyd Arthur	Worcester	8 Nutting Avenue
Fischer, Albert Oswald, Jr.	Vineyard Haven	75 Pleasant Street, A.T.G.
Fish, Richard Everette	Gill	Gill
Fournier, Francis Edward	North Dartmouth	73 Pleasant Street, Kolony Klub
Gleize, Daniel Antoine	Stockbridge	7 McClellan Street
Gomes, August Joseph	Plymouth	11 Phillips Street
Goodwin, Thomas James	Newton Upper Falls	Chestnut Street, care of Mrs. Hauff
Graham, Malcolm Lawrence	Bradford, Penna.	73 Pleasant Street, Kolony Klub
Hall, Elliot Durkee	Dudley	73 Pleasant Street, Kolony Klub
Hall, Roland	New Bedford	73 Pleasant Street, Kolony Klub
Harris, William Allen	Springfield	Davenport Inn
Harrison, Donald	Boston	16 Hallock Street
Hartley, Edwin Hayden	Westfield	10 McClellan Street
Haskell, Ann	Lynn	8 Allen Street
Hosmer, Hammond Chase	Arlington	160 Hillside Avenue
Howe, John Wadsworth, Jr.	Nashua, New Hampshire	Box 81, North Amherst
Hunt, Roger Archie	Leicester	73 Pleasant Street, Kolony Klub
Innes, Frank	Barre, Vermont	4 Nutting Avenue
Jacobson, Nicholas Biel	New York City, N. Y.	33 Northampton Road
Jacoby, Charles Wesley	Newtonville	35 North Prospect Street
Jekanowski, Carl William	Amherst	R.F.D. No. 3, Box 136
Jenkins, Paul	Wollaston	North Pleasant Street, care of Mrs. Cromack
Jennings, John Henry	Shelton, Conn.	Poultry Plant
Jennings, William Joseph	South Natick	13 Hallock Street
Keefe, Charles Dennis, Jr.	Bellows Falls, Vermont	Box 5, Stockbridge Hall
Kelley, Jason Torrey	Saxonville	73 Pleasant Street, Kolony Klub
Kelley, Ransom Pingree	Brookline	75 Pleasant Street, A.T.G.
Kelly, Edward Richard	Gilbertville	75 Pleasant Street, A.T.G.
Lawrence, Frederick Oscar	Weymouth	15 Cottage Street
Loncar, John James	Worcester	160 Hillside Avenue
Macintosh, Pearson	Longmeadow	101 Pleasant Street
Mason, Kenneth Randall	Malden	73 Pleasant Street, Kolony Klub
Mayo, James David Neal	Arlington	48 Pleasant Street
Moore, Sherwood Arlington	Leeds	Leeds
Morey, Earl Levi, Jr.	Sturbridge	Baker Lane, care of Mrs. Webb
Offutt, Katherine Berry	Southboro	30 North Prospect Street
Olson, Oscar Evald, Jr.	Amherst	Box 641
Parker, Warren Richmond	Braintree	13 Hallock Street
Patten, James Warren, Jr.	Sterling	10 McClellan Street
Payson, Vivian Lewis	North Dartmouth	13 Hallock Street
Pratt, Robert Ely	Florence	Florence
Prentice, John Francis	Plymouth	42 Cottage Street
Price, Merrick Barraud	South Weymouth	15 Cottage Street
Ralston, Robert Henry	Framingham	24 Fearing Street
Ready, Edwin William	Brighton	160 Hillside Avenue
Richardson, Raymond Willis	West Brookfield	9 Phillips Street
Robbins, Richard Alfred	Needham	13 Hallock Street
Ross, William Cummings	North Quincy	North Pleasant Street, care of Mrs. Cromack
Ruda, John Joseph, Jr.	Dudley	157 Main Street, care of Mrs. Barlow
Samson, Donald Alexander	Florence	Florence
Savery, Clinton Ferdinand	Marion	Baker Lane, care of Mrs. Webb
Schulte, Barbara Eleanor	Lowell	30 North Prospect Street
Smith, Lauchlan Ashley	Westport	6 Nutting Avenue
Smith, Philip Firth	Methuen	55 Amity Street
Sprague, John Davis	Weston	43½ Sunset Avenue
Strong, Robert Francis	Allston	15 Cottage Street
Sturtevant, Richard Clinton	Halifax	4 McClure Street
Sutherland, John	Springfield	Springfield
Taylor, Gordon Munsing	Granby	Granby
Thomas, William Edward	Amherst	R.F.D. No. 3, Box 137
Thorpe, Ernest Harry	Framingham	73 Pleasant Street, Kolony Klub
Timoshuk, Andrew	Whitestone, New York	11 Phillips Street
Tompkins, Frederick Joseph, Jr.	Lowell	160 Hillside Avenue
Toth, Edwin Alexander	Wallingford, Conn.	73 Pleasant Street, Kolony Klub
Trible, Arnold Victor	Worcester	160 Hillside Avenue
Waldecker, Herman, Jr.	Braintree	43½ Sunset Avenue
Waldron, William Godolphin, Jr.	Pittsfield	97 Pleasant Street

Williams, Walter Douglas	Glenbrook, Conn.	75 Pleasant Street, A.T.G.
Yukl, Grace Jeanette	Turners Falls	Turners Falls
	CLASS OF 1937.	
Acker, Harry Richard	Hartford, Conn.	97 Pleasant Street
Aho, Arne John	Maynard	27 Fearing Street
Allen, Norman Coolidge	Worcester	12 East Pleasant Street
Aloisi, Leo	Florence	Florence
Amenda, Alexander Joseph	Amherst	79 Northampton Road
Andrews, Howard Henry	Fitchburg	17 Phillips Street
Anthony, Irving Sturtevant	New Bedford	North Pleasant Street, care of Mrs. Howard
Baker, George Campbell	Braintree	North Hadley Road, care of Mrs. Glick
Baldwin, Donald Eugene	Chicopee	Baker Lane, care of Mrs. Webb
Ball, Habor Norman	Worcester	5 East Pleasant Street
Bartlett, Stanley Wymann	Springfield	Springfield
Bauks, Joseph John	Marlboro	15 Cottage Street
Benson, Clarence William	Stoughton	North Pleasant Street, care of Mrs. Harold Hobart
Benson, Robert Frank	Stoughton	North Pleasant Street, care of Mrs. Harold Hobart
Boguslawski, Irene	Amherst	71 Northampton Road
Bothfeld, Theodore, Jr.	Sherborn	53 Lincoln Avenue
Boyce, Thomas Joseph, Jr.	Swampscott	57 Pleasant Street
Boyer, Burleigh Bond	Lowell	19 Fearing Street
Broughton, Joseph Edwin, Jr.	Brookfield	12 Hallock Street
Burnham, William Ralph	Windsor, Vermont	North Hadley Road, care of Mrs. Glick
Bush, George Barrett	Newfane, Vermont	North Pleasant Street, care of Mrs. Harold Hobart
Cahill, Gordon Francis	Springfield	North Hadley Road, care of Mrs. Glick
Callahan, Frederic Daniel	Sunderland	Sunderland
Callahan, Vincent Joseph	Harvard	86 Pleasant Street
Carson, Walter Forrest	Northampton	Northampton
Christensen, Irving Henry	Hartford, Conn.	Chestnut Street, care of Mrs. Hauff
Conklin, Joseph	Amherst	Box 44
Cook, Harold Parish	Belchertown	Belchertown
Corey, Howard Butnam	Plymouth	11 Phillips Street
Cummings, Clifford Embury	West Springfield	West Springfield
Cunningham, Harry Irving	Framingham	2 Cosby Avenue
Curran, Vincent Bernard	Framingham	108 Pleasant Street
Dowse, Charles Francis	Weston	3 Farview Way, care of Dr. DeRose
Drago, Joseph Ernest	Fitchburg	18 Cottage Street
Dubner, Nathan	Wareham	11 Phillips Street
Dufur, Robert Franklin	Falmouth	4 Chestnut Street
Duprey, Charles Augustus, Jr.	Natick	24 Fearing Street
Eastman, John Myron	Turners Falls	86 Pleasant Street
Ecklund, Arthur Woodrow	Pittsfield	83 Pleasant Street
Eisenhauer, Robert Arnot	Cambridge	10 McClellan Street
Emanuele, Armando	Revere	Leverett Street, North Amherst, care of J. Conklin
Estes, Carroll Wilford, Jr.	Halifax	4 McClure Street
Fife, Frederick Edwin	West Springfield	West Springfield
Fischer, Frederick Oswald	Vineyard Haven	75 Pleasant Street, A.T.G.
Foley, Richard Francis	Amherst	3 Allen Street
Fowles, Elwyn Madsen	Southampton	Southampton
Fulton, Alpheus Oliver	Waltham	12 Hallock Street
Gagliarducci, Milton Moauro	Springfield	97 Pleasant Street
Godin, William Raymond, Jr.	Northampton	Northampton
Goldrick, Joseph Richard	Jamaica Plain	Baker Lane, care of Mrs. Webb
Goodwin, Cecil Melcome	Dorchester	11 Phillips Street
Goodwin, Ralph Currier, Jr.	Reading	7 Nutting Avenue
Gould, Sidney	Malden	56 Pleasant Street
Graves, Douglas Beals	Ashfield	Farm House, M.S.C., care of Mr. Parsons
Gregory, Franklin Edwards, Jr.	Winchester	43½ Sunset Avenue
Hair, Elmer Everett, Jr.	Worcester	42 Cottage Street
Hamm, Howard Francis	Longmeadow	35 Lincoln Avenue
Hanks, Guilford Norman	Amherst	79 Main Street
Harris, Ralph Edward	Dorchester	86 Pleasant Street
Hartshorn, Arthur Nelson	Needham	5 Farview Way
Higdon, Bernard Francis	Washington, D. C.	4 Allen Street
Hodgen, Robert Johnston, Jr.	Hubbardston	Belchertown
Holmes, Edwin Stuart	South Weymouth	3 Nutting Avenue
Horn, Welland Symons	Brandon, Vermont	18 Cottage Street
Hoyt, Arthur Wells	Merrimac	55 Amity Street
Jackimczyk, Bernard John	Florence	Florence
Jansen, Fred Emil	Stamford, Conn.	Farview Way, care of Dr. Shaw
Karakula, Michael Carol	Northampton	Northampton
Keenan, John Francis	Cherry Valley	18 Cottage Street
Kelleher, Jack Joseph	Brockton	12 East Pleasant Street
Kellogg, Alvin Richard	Agawam	Agawam
Kilgour, Andrew Ross	Somerville	3 Nutting Avenue
Landers, James Michael	Holyoke	Holyoke
Larrabee, Noel Leavitt	Framingham	2 Cosby Avenue

Leland, Richard Bruce	East Bridgewater	6 Nutting Avenue
Levreault, Roger Pierre	South Hadley Falls	South Hadley Falls
Lewis, Daniel Bell	Lexington	15 Phillips Street
Lowery, Samuel Robert	Arlington	12 Chestnut Street
Mackie, Henry Leonard	Hubbardston	North Hadley Road, care of Mrs. Glick
Mercer, Donald Nelson	Palmer	6 Nutting Avenue
Merino, Anthony Ralph	Waltham	Leverett Street, North Amherst, care of J. Conklin
Minkus, Peter William	Westfield	17 Phillips Street
Miskewich, Michael Wasil	Chicopee Falls	56 Pleasant Street
Moran, Eugene Denis	Chicopee Falls	Chicopee Falls
Morrice, James Forbes	Vineyard Haven	75 Pleasant Street, A.T.G.
McCormack, William Vialle	Arlington	38 Cottage Street
McCoy, John Angus	Belmont	25 North Prospect Street
McDonough, Eugene Francis	Jamaica Plain	11 Phillips Street
Nelson, Ronald Arthur	Bernardston	East Pleasant Street
Newell, William Nelson	Maysville, Ky.	North Amherst, care of Prof. French
Newhall, Marion Watkins	Peabody	16 Nutting Avenue
Nixon, Alton Dewey	Tolland	108 Pleasant Street
Norberg, Edward Francis	Arlington	73 Pleasant Street, Kolony Klub
Nowak, Steve Arthur	Chicopee	Chicopee
Olsen, Burton Oswald	Westfield	10 McClellan Street
Olson, Edward Maurice	Amherst	Box 641
Perkins, Henry Jason	Springfield	97 Pleasant Street
Pratt, Esther	Greenwood	30 North Prospect Street
Prindle, William Eaton	Springfield	97 Pleasant Street
Prouty, John Albert	Whitman	4 McClure Street
Reed, Charles McFarquhar, Jr.	Marblehead	14 Orchard Street
Reilly, Martin Austin	Springfield	108 Pleasant Street
Riddle, Malcolm	Cambridge	5 Fearing Street
Rosenfield, Robert Leonard	Dorchester	56 Pleasant Street
Ruggles, Richard Newton	Hingham	4 Allen Street
Rzeczkowski, Leon Anthony	Amherst	65 Northampton Road
Sanderson, Winthrop Whitney	Greenfield	Greenfield
Schmidt, Edward Louis	Belchertown	Belchertown
Shattuck, Robert Vryling	Pepperell	18 Cottage Street
Simmons, Herbert Carlson	Wollaston	15 Phillips Street
Sloet, John Jacob	Newton Centre	15 Phillips Street
Smith, Elmer Clark	Waltham	83 Pleasant Street
Smith, Harrison Edward, Jr.	Lexington	30 Sunset Avenue
Smith, Robert Little	Newburyport	3 Nutting Avenue
Solander, Robert Fabian	Winchendon	86 Pleasant Street
Spear, Manton Presby	Wakefield	29 Main Street
Steele, Greydon Philip	Weston	86 Pleasant Street
Stiles, David Nutting	Monson	111 Butterfield Terrace
Swain, Oliver Francis	Falmouth	4 Chestnut Street
Swatson, Benjamin	Amherst	Box 62
Taylor, Fred Leander, Jr.	Ashby	101 Pleasant Street
Taylor, Roger Francis	North Amherst	North Amherst
Thompson, Whittier Howe	Wellesley Hills	Lord Jeffery Inn
Tick, Frank Joseph	Southbridge	56 Pleasant Street
Till, Fred Ethan	Amherst	55 Northampton Road
Trowbridge, George Willard	West Springfield	West Springfield
Tucker, Frederick Chandler	Marlboro	55 Amity Street
Tuller, Oliver Holcomb	West Simsbury, Conn.	7 Nutting Avenue
Wade, Dewhirst William	Holyoke	Holyoke
Wanczyk, Walter Charles	Hadley	Hadley
Watts, Malcolm Herbert	Stoneham	11 Phillips Street
Whitcomb, Arthur Lewis	Dodge	19 Fearing Street
White, Harry Lester	Hingham	8 Nutting Avenue
Whitman, Pauline	Marshfield	30 North Prospect Street
Whittaker, Carleton Hall	Danvers	108 Pleasant Street
Winkler, Marshall Norman	Wakefield	29 Main Street
Wojtkielewicz, Frank Joseph	South Deerfield	South Deerfield
Yee, Edward	Somerville	86 Pleasant Street
Young, Wilbur Parmelee	Wallingford, Conn.	73 Pleasant Street, Kolony Klub

SPECIAL STUDENTS.

Brakey, Walter Glennie	Holyoke	Holyoke
Farmer, Cora Elizabeth	Amherst	8 Lincoln Avenue
Gund, Mrs. Mary Burton	LaCrosse, Wisconsin	2 Orchard Street

SUMMER SCHOOL, 1935

Atkins, Marjorie M.	South Amherst
Anderson, Philip B.	Framingham
Baker, Dorothy M.	Millers Falls
Ballard, Dorothy V.	Gilbertville
Barlow, Ruth M.	Amherst
Barnes, Lois B.	Florence
Belgrade, Harry L.	Northampton
Beloin, Mederic H., Jr.	Holyoke
Bittinger, Richard	Framingham
Bliss, Sheldon B.	Greenfield
Bliss, Walter D.	Attleboro
Boland, Katherine	Dracut
Brackley, Floyd	Stafford Springs, Conn.
Breault, Louis A., Jr.	Auburn
Brown, Alma	Amherst

Brown, Grace F.	Milford
Bruneau, Alfred W.	North Plymouth
Casey, Mrs. Jeannette S.	Brighton
Clark, Martha I.	Dalton
Collins, George G.	Pittsfield
Connor, Daniel J., Jr.	South Hadley Falls
Conroy, James A.	Pittsfield
Coughlin, Ursula I.	Lee
Crowley, Leo V.	Amherst
Currie, Eugene K.	Ashfield
Dacey, Margaret T.	Conway
Danaczko, John	South Hadley
Davenport, Beatrice L.	Mendon
Downing, Helen A.	Holyoke
Driscoll, Paul J.	Northampton
Dunphy, Esther M.	South Hadley Falls
Ellis, Catherine M.	East Brewster
Erikson, Ingrid S.	Northampton
Eshbach, Charles E.	Winchester
Estabrook, Gordon D.	Florence
Everson, John N.	North Amherst
Ferguson, Herbert W.	Pittsfield
Filipkowski, Frances P.	East Whately
Fisher, Robert B.	Northampton
Flower, Ione K.	Deerfield
Frost, George E.	Holyoke
Gavagan, James E.	Dorchester
Gowdey, M. Kathleen	Amherst
Grayson, Herbert	Holden
Guion, Ellen	Newton
Harris, Robert R.	Leominster
Hartwell, Priscilla F.	Brockton
Hawley, Edna B.	Amherst
Hawley, Helen M.	Holyoke
Hoar, Nancy H.	Amherst
Howard, Harlan	Amherst
Hubbard, Catherine N.	Sunderland
Jenkins, Doris W.	Shrewsbury
Johnson, Edith E.	Quincy
Keefe, Katherine G.	Hadley
Kennedy, James J.	Holyoke
Kerr, James, Jr.	Adams
Kidder, Polly	Amherst
Kingsbury, Aileen L.	Braintree
Kingsbury, Harlan W.	Braintree
Klaucke, Elfriede	Worcester
Knudsen, Harold R.	Springfield
Landers, Thomas B.	Bondsville
Lawrence, Eleanor M.	Northampton
Levine, Arthur S.	Brookline
Lewis, Walter F.	Andover
Lipinski, Julia A.	South Deerfield
Lombard, Gardner C.	Danvers
Lyon, Frank M.	Hamden, Conn.
Mahan, Kathryn E. A.	Worcester
Maher, Mary F.	Great Barrington
Malloch, Ronald C.	Greenfield
Martin, Edward W.	Hudson
Martin, Florence E.	North Billerica
Miller, Joseph	Roxbury
Mitchell, Viola E.	Hadley
Moriarty, Timothy J.	South Hadley Falls
Morris, Dorothy M.	Northampton
Musgrove, Sophie D.	Pittsfield
McAndrews, Walter F.	Hartford, Conn.
McCabe, Winifred A.	Roslindale
Mackenzie, Warren L.	Florence
Nice, Barbara S.	Columbus, Ohio
O'Brien, Katherine L.	Amherst
O'Brien, M. Josephine	Lee
Olfene, Fred E.	Lynn
Page, Alfred S.	Amherst
Page, Charlotte A.	Amherst
Porter, Wayland R.	Hanover, N. H.
Ralbe, Anne	Forest Hills, L. I., N. Y.
Ralbe, Rose	Forest Hills, L. I., N. Y.
Raleigh, Walter D.	West Springfield
Raynes, William A., Jr.	Hyde Park
Roberts, Oliver C.	Amherst
Rolnick, Nellie R.	Chicopee Falls
Roney, Jeanette M.	Portland, Maine
Rosenzweig, Gerda L.	Greenfield
Ross, Charles F.	Auburn
Russ, Mrs. Nellie W.	Sunderland
Scholz, Warren H.	Lawrence
Sharkey, Mary F.	Jamaica Plain
Sievers, Frederick J.	Amherst
Smith, Beulah E.	Charlemont
Smith, Hilda S.	Easthampton
Smith, Ralph F.	Ashland, Maine
Smith, Rodger C.	Amherst
Snow, Annie E.	South Hadley

Stefanelli, Velda	South Hadley
Stepat, Walter	Braintree
Stiles, Vernon D.	Hadley
Strickland, Elinor L.	Amherst
Tannatt, Mary A.	Easthampton
Thatcher, Christine B.	Cummington
Tufts, William H.	Shelburne Falls
Tuttle, Alden P.	Amherst
Tuttle, John A.	Torrington, Conn.
Upham, T. Carlton	Fitchburg
Wallace, Mildred L.	South Hadley Falls
Warner, Jean L.	Sunderland
Watt, Margaret E.	Ambler, Penna.
Watson, Vernon K.	Amherst
Weeks, Mildred A.	South Amherst
Welles, Barbara	Amherst
Werner, Katharine G.	Lenox
White, Howard E.	Amherst
White, Lucy E.	Amherst
Wilk, Joseph A.	Adams
Wishart, Frederick J.	Turners Falls
Witt, Earl M.	Stafford Springs, Conn.
Wright, Frederick D.	Amherst
Yeaw Ruth L.	Greenfield
Zerbone, Vivian M.	New Bedford

NON-CREDIT COURSES

Andrews, Katherine	Brockton
Bailey, Mary C.	Brockton
Barlow, Helen W.	Amherst
Beebe, Helen E.	Monson
Bilton, Myrtle	East Longmeadow
Bonner, John R.	Fall River
Bourne, Roberta	Amherst
Burgess, Marion	Brockton
Busby, Doris L.	Brockton
Cadaret, Mrs. Margaret	Lawrence
Callahan, Ellen C.	Lawrence
Carlin, Margaret J.	Brockton
Carr, Mrs. Felix	Peabody
Clark, Carolyn P.	Tyringham
Clark, Marguerite	Westfield
Close, Marion E.	Brockton
Collins, Florence I.	Hingham
Cook, Eveline B.	Jamaica Plain
Cook, Mrs. June S.	North Scituate
Cook, Mary L.	Reading
Coolidge, Janet	Greenfield
Crombie, Elizabeth	Thompsonville, Conn.
Currie, Robert B.	Taunton
Davidson, Katherine S.	Springfield
Davis, Margerie E. N.	North Amherst
Dean, Mrs. Kathryn C.	Lawrence
Derby, Edna H.	Amherst
Donovan, Mary J.	Lawrence
Donovan, Nellie E.	Hyannis
Driscoll, Frances	Holyoke
DuBuque, Julie	Holyoke
Durkan, Rena N.	Amherst
Fairfield, Mrs. Elizabeth	Pittsfield
Feige, Blanid	Worcester
Foley, Mae E.	Lawrence
Frye, Florence M.	South Hadley Falls
Garrity, Mrs. Lillian	Berkley
Gibbons, Mrs. T. F.	Holyoke
Glowinski, Mrs. Helen	Holyoke
Harrington, Mrs. Alice J.	Wayland
Hatch, Mrs. Elizabeth	Marshfield
Hawley, Rebecca M.	Sautuit
Heffron, Winifred A.	Holyoke
Howard, Ernest A.	Haverhill
Hyland, Helen G.	Lawrence
Jones, Mona	Lawrence
Jordon, Chester P.	Hyannis
Kane, Eugene J.	Westfield
Keeler, Marion	West Roxbury
Keliher, Anna P.	Taunton
Kelley, Margaret E.	Lawrence
Kisiel, Louise	Ware
Krawczyk, Julia	Amherst
LaMontagne, Mary	Lawrence
Lane, Mary	Lawrence
Leighton, Mrs. Marjorie	Hingham Centre
Lucier, Gerard A.	Adams
Mahan, M. Elizabeth	Longmeadow
Martin, Mrs. James	Westfield
Meehan, Josephine E.	Accord
Merry, Avis L.	Pembroke
Miller, Mabel A.	Amherst
Moody, Ethel M.	East Northfield
Moore, Mrs. Edna L.	Chelmsford
Morry, Edmund E.	Hyannis

Morse, Alfred W.	West Medford
Murphy, Thomas W.	Holyoke
McNamara, Mary	Maynard
MacNeill, Cora	Brockton
Niedzielski, Josephine	Holyoke
Nietzold, Hazel R.	Northampton
O'Brien, Helen O.	Holyoke
Palter, Louis	Revere
Powers, Helen L.	Hadley
Pratt, Mrs. Eula	West Bridgewater
Prescott, Lucinda E.	Westford
Reilly, Anna M.	Ware
Richards, Mrs. John E.	South Deerfield
Rogers, Katherine E.	Worcester
Rose, Mrs. Nettie M.	Milford
Sarrasin, Mrs. Mary	Blackstone
Sealey, Nancy	Maynard
Shay, Mildred M.	Millbury
Silber, Mrs. Jeanette B.	Springfield
Skinner, Edna L.	Amherst
Smith, Alice M.	Northboro
Smith, Dorothy	Brockton
Smith, Edith J.	State Line
Smith, Ross A.	Worcester
Stevens, Mrs. Anne	Lawrence
Stewart, Ethel	Brockton
Stuart, Charles T.	Warwick
Swenson, Mrs. M. Elizabeth	Shrewsbury
Tourtellotte, Clifton F.	South Lancaster
Turner, Isobel	Maynard
Vincent, Margaret	Rehoboth
Warner, Constance A.	Sunderland
Warner, Ruth	Sunderland
Wells, Inez N.	Brockton
Westcott, Gladys L.	Amherst
White, Adelita	Adams
Wilder, Helen F.	Brockton

WINTER SCHOOL, 1935

Adams, Emory E.	New Britain, Conn.
Almonte, Mrs. Alfred	Providence, R. I.
Almonte, Alfred	Providence, R. I.
Andersen, John A.	Goshen
Antone, Manuel I.	Greenfield
Appleby, Frank L.	Monson
Ashton, John P.	Pittsfield
Bacon, Robert C.	Barre, Vermont
Bahlin, Herbert E.	East Longmeadow
Bailey, S. Waldo	Pittsfield
Baker, Stuart A.	Whitinsville
Ballard, Edward B.	Lexington
Berg, Robert	Whately
Berghorn, Alfred J.	Elsmere, N. Y.
Bertozzi, Edward J.	Pawtucket, R. I.
Biernat, Lucien	Chicopee
Bixby, Herbert H.	Sunderland
Bliven, Raymond F.	Otis
Boucher, David	Lewiston, Maine
Bowman, Robert A.	Chicopee Falls
Bradbury, Harold M.	Cambridge
Brouillard, Lawrence J.	Cambridge
Brown, David M.	Hingham
Brown, George S.	Drury
Bull, Floyd M.	Westfield
Burnett, Harry	Southboro
Cahoon, Howard C.	South Carver
Caldon, James F.	West Somerville
Calkins, Charles	Greenfield
Callahan, Edward V.	Lowell
Campbell, Weldon	Greenfield
Carberry, Jack	Lake Bluff, Ill.
Chabot, Joseph	Florence
Charest, Raymond	Fall River
Chodkowsky, Henry	Fall River
Claffey, Francis J.	Pittsfield
Coit, Everett L.	Norfolk
Colbert, Robert E.	Melrose
Comiskey, Edward J.	Dover
Damon, Stanley W.	North Abington
Davis, Arthur, Jr.	Waterford, Conn.
Del Prete, Albert F.	Rockland
Dibble, Harvey	Northampton
Dissel, Mary A.	Winchester
Doherty, Thomas J.	Greenfield
Donahue, Andrew	Lawrence
Donaldson, George M.	Fitchburg
Doyle, John F.	South Hadley
Dufresne, William U.	Granby
Dyer, Edwin M.	Fitchburg
Eaton, Arthur W.	Orange
Farrell, Milton A.	Lowell
Feeley, John	Pittsfield

Fells, Donald F.	Norwich, Conn.
Fitzgerald, William	Pittsfield
Flavin, Edward M.	Greenfield
Frost, Edmund L.	Arlington
Frye, Albert M.	Leominster
Frye, Howard S.	Lenoxdale
Fullum, Harry E.	Amherst
Gagne, Lucien A.	South Hadley
Gardner, Karl H.	Haverhill
Geier, Max	New Bedford
Girvan, Robert J.	Quincy
Glesmann, Edward	Holyoke
Golden, John H.	Wollaston
Goodreau, Joseph P.	Palmer
Gorney, Walter	Pittsfield
Green, Frank L.	Orange
Greenwood, Joseph E.	Leeds
Griffith, Thomas E.	Cambridge
Guimond, Arthur C.	Fall River
Hall, Ernest F.	Kensington, Conn.
Hamilton, Harry	Middleboro
Hart, James W.	Holyoke
Hatch, George F., Jr.	West Roxbury
Hebert, V. Leslie	South Weymouth
Holzapfel, John A.	Otis
Howe, Thomas H.	Wellesley
Ivey, Julian D.	Lynn
Jones, John	Florence
Jones, John A.	Peabody
Knudsen, John T.	North Haven, Conn.
Leamy, Leo	Fitchburg
Leonard, Mahlon	South Hanson
Look, Fred W.	Hyannis
Lowell, Wharton	Chestnut Hill
Lubin, Leonard E.	Worcester
Mahoney, John J.	Springfield
Mannaker, Harry L.	West Hartford, Conn.
Mansfield, Richard D.	Wakefield
Monat, Urgel A.	Springfield
Moores, William	State Farm
Morrison, James	Turners Falls
Mulvaney, John F.	Springfield
MacAfee, Norman H.	Dedham
McCarthy, Leo	Northampton
McCrillis, George M., Jr.	East Brookfield
McDevitt, Charles F., Jr.	Willimansett
McLay, John J.	North Andover
McNamara, Thomas J.	Hudson, N. Y.
Nann, Norbert A.	Syracuse, N. Y.
Nelson, Charles E.	Fall River
Nelson, Ronald A.	Bernardston
O'Connor, Joseph	Belmont
Olsson, Gunnar E.	Stockholm, Sweden
Parker, Phinehas G.	Springfield
Parsons, Atherton W.	Southampton
Pasukonis, Peter M.	Springfield
Pelton, H. Fred	Hartford, Conn.
Penhallegon, Albert S.	Oxford
Peters, Edward S.	Lockport, N. Y.
Petersen, Olaf	Albany, N. Y.
Pilch, Chester	Feeding Hills
Pinney, Mrs. M. Fern	Longmeadow
Potter, Mrs. Mildred	Pittsfield
Ray, Robert P.	Cohoes, N. Y.
Reeve, Walter L.	East Foxboro
Robinson, Joseph W.	North Oxford
St. Armand, William J.	Waltham
St. John, Amos	North Reading
St. John, George E.	Lee
Sanderson, Walter W.	Greenfield
Scharrett, John L.	East Taunton
Shields, John F.	Osterville
Shimkus, Veronica A.	Northampton
Sonia, Peter N.	South Lancaster
Spear, C. Woodman, Jr.	Wakefield
Sperandio, Nazareth J.	Marlboro
Stearns, Truman B.	Pittsfield
Steiner, John	Greenfield
Stevens, Charles A.	North Adams
Stewart, Andrew W.	Quincy
Stowers, William G.	Sandwich
Sturtevant, Ronald	Danvers
Sundae, Anthony	Bridgeport, Conn.
Svenson, Harold	Otis
Sweeney, Richard D.	Chester
Taylor, Gordon	Concord
Taylor, Kenneth G.	Northampton
Taylor, Philip M.	Beverly
Tenney, Clinton A.	Shutesbury
Terry, Parker C., Jr.	Batavia, N. Y.
Toole, Frank P.	Amherst
Trask, Norman S.	Durham, N. H.

Tripp, Ralph W.	North Westport
Trudel, Jules	Shawinigan Falls, Quebec, Can.
Upson, Warren C.	Adams
Valente, Abel A.	New Bedford
Vanasse, Lucien J.	Northampton
Webber, Mrs. Gertrude T.	Amherst
Whalen, John P.	Waltham
Whitehouse, Joseph T.	West Cummington
Whitenett, Raymond L.	Montague
Wilson, G. Weir	Framingham
Wiltrakis, Frank P.	North Stoughton
Woodard, Clark E.	Colebrook, N. H.

SUMMARY OF SHORT COURSE ENROLLMENT

	Men	Women	Total
Stockbridge School of Agriculture:			
Second year	93	4	97
First year	135	4	139
Winter School, 1935	151	6	157
Summer School, 1935 (Credit Courses)	64	68	132
Summer School 1935 (Non-Credit Courses)	13	89	102
Specials	1	2	3
Totals	457	173	630

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Degrees conferred in 1935	100
Department assistants	92
Deportment	18
Description of Courses:	
Agricultural Economics	35
Agricultural Engineering	29
Agronomy	31
Animal Husbandry	32
Bacteriology	48
Beekeeping	57
Botany	50
Chemistry	53
Dairy Industry	34
Drawing	44
Economics (General)	64
Education	67
English	73
Entomology	55
Farm Management	35
Floriculture	31
Forestry	42
French	75
Geology	60
German	76
History	70
Home Economics	38
Horticultural Manufactures	43
Horticulture	46
Landscape Architecture	44
Languages and Literature	72
Mathematics and Civil Engineering	60
Military Science	81
Music	77
Olericulture	46
Philosophy	69
Physical Education	78
Physics	62
Physiology	49
Plant Breeding	48
Pomology	47
Poultry Husbandry	37
Psychology	68
Sociology	70
Spanish	76
Veterinary Science	63
Zoölogy	58
Division of Agriculture	29
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Gifts and Bequests

For the information of those who may wish to make a gift or a bequest to this College, the following suggestion is made as to a suitable form which may be used.

There are a number of worth-while activities of the College which are handicapped by lack of funds and for which small endowments would make possible a greater measure of service to our students and to the Commonwealth. The religious work on the Campus is an example. This is now carried on in a very limited way by current private contributions. Further information concerning this and other activities in similar need will be gladly furnished by the President.

Suggested Form

"I give and bequeath to the Trustees of the Massachusetts State College, at Amherst, Massachusetts, the sum of.....dollars."

(1) (Unrestricted)
"to be used for the benfit of Massachusetts State College in such manner as the Trustees thereof may direct."

or (2) (Permanent Fund: income unrestricted)
"To constitute an endowment fund to be known as the..... Fund, such fund to be kept invested by the Trustees of Massachusetts State College and the annual income thereof used for the benefit of the College in such manner as the Trustees thereof may direct."

or (3) (Specific Purposes)
"to be used for the following purposes,"

(Here specify in detail the purposes.)

MASSACHUSETTS STATE COLLEGE

REPORT NUMBER

OF THE

STATE COLLEGE BULLETIN

THE REPORT OF THE PRESIDENT AND OTHER OFFICERS OF ADMINISTRATION FOR THE YEAR ENDING NOVEMBER 30, 1935, IS A PART OF THE SEVENTY-THIRD ANNUAL REPORT OF THE MASSACHUSETTS STATE COLLEGE AND AS SUCH IS PART I OF PUBLIC DOCUMENT 31. (SECTION 8, CHAPTER 75, OF THE GENERAL LAWS OF MASSACHUSETTS.)

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Amherst, Massachusetts

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*The complete report of the Director of the Experiment Station is published separately as a bulletin of the Experiment Station.

Massachusetts State College

REPORT OF PRESIDENT TO THE BOARD OF TRUSTEES FOR YEAR ENDING NOVEMBER 30, 1935

With all that makes up the program of the College during any one year, a year goes by rapidly after all. In looking back over a year to indicate accomplishments or special needs, it is really very difficult to evaluate results of the year's work and yet in this brief report an effort will be made to present a picture that will let you see the year as it has hurried by.

In the opening paragraphs of the report to your body of last year, it was indicated that the year 1933–34 was a year of determination—a fighting year. A similar statement might well be made as to the year 1934–35. It has been a year of hard work and determination on the part of all responsible for the work of the College; Administration, Faculty, and to the extent of their responsibility, the Alumni and the student body. Progress has been made and it is not exaggeration to say that the College is a somewhat better college than it was last year.

In looking back over the past year to try and identify accomplishments, needs, and unsolved problems, it might well be said that the following have characterized the year:

1. Improvements in teaching and research.
2. Improved opportunities for effective study by students and for expression of student interests.
3. Increased cultural opportunities for students.
4. Finer leadership of the student body by students.
5. Increased use of campus for educational meetings and several important campus events.
6. The recognition of the need for sane and forward-looking planning for an increased student body and for meeting the need for enlarged physical plant.
7. Increased and more effective service to people living on the land throughout the Commonwealth.
8. The completion of adjustments to required economies.
9. Increased questioning as to the road ahead for the College.

In presenting this brief report for consideration by the Governing Board of the College, it seems well to enlarge upon the statements which seem to characterize the year as made in section one.

Improvements in Teaching and Research

There has been definite and easily measured improvement in both teaching and research at the College during the year just past. In my service with the College, whether it be short or long, my objective can be stated simply as a determination to achieve annual improvement in teaching and research. The real objective of any Land-Grant College, and perhaps any other type of college, should be better teaching and better research to the end that the College may accomplish the most for the boys and girls making up its student body and for those people of the State who have a right to look to the College for leadership in agriculture, in industry and in creating living conditions which will make possible fuller and more satisfactory lives for all the people of the Commonwealth.

Reference has perhaps been made in previous reports to questions which have been asked often by citizens of the State since my work began at the College. Within a few weeks after taking up the work, several people at the College and on the outside, asked if the time had not arrived for opening the doors of the College to a greatly increased student body and for the development of the College into a university. It has been of great interest to me to see how these questions are repeated almost from month to month as my acquaintanceship is widened through the State. Because of my keen interest in education, and particularly in educa-

tional efforts as they are carried on in Land-Grant Colleges, my answers to these questions from the beginning have been that there are objectives and activities of far greater importance to the College in the years ahead than an increased student body or the conversion of the College into a university, and these are the strengthening of the College in teaching and research and the creation of conditions at the College that will make possible more wholesome thinking and living on the part of the students we now have. In other words, it is my strong belief that our objective at this time should be the building of a better college, a college that will make possible the graduation from year to year of better educated men and women. Perhaps if we can accomplish a better college it will be entirely in place to leave to the people of the State what the College is to be called in the future, and how many students it is to receive.

Improvement in teaching has been accomplished during the past year in two ways. First, there has been a very definite effort made by the Administration and the Heads of Divisions and Departments not only to put before the teaching staff higher ideals as to teaching, but actually to check performance. As no two teachers perform in the same way in presenting their subjects, it is somewhat difficult to set up specific standards to which all teachers are required to measure. However, general standards are being formulated and there is, beyond question, a growing appreciation of the necessity for improved teaching and, particularly, the need on the part of individual instructors for more careful preparation for and more careful presentation of material. In a number of cases, where reports have come of carelessness in teaching, the instructor involved has been called into conference and in every case these conferences have been followed with improvement.

Still another advance in the direction of improvement in teaching has been greatly increased care used in the selection of new instructors. While recommendations as to new instructors are left largely with the Head of a Department or a Division, necessity has been emphasized for conferences with men and women under consideration and the fullest possible investigation of past records has been undertaken. A brief survey of the men and women who have been added to the staff of the College during the past year will indicate the fact that only those with a superior educational background and experience have been added to the staff of the College.

Impetus has been given research work on the Campus during the past year through the action of the Sigma Xi Club, made up of thirty members, in making application for a Chapter of the Honorary Society of Sigma Xi. A Committee of the Club, after making a most thorough study of research on the Campus, prepared a report of approximately ninety pages telling in the most effective way of the progress of research at the College, of facilities for research, and of accomplishments in research. This report includes a most significant list of books, bulletins, and reprints of articles in scientific journals written by members of the staff. If productive scholarship in the way of publication is indicative of accomplishments in research in a college, then the publications by members of the scientific staff of the College indicate not only a very healthy attitude toward research, but very effective accomplishment.

A second impetus to research on the Campus has been the receipt during the year of numerous gifts from individuals and industrial concerns of funds for industrial scholarships and for special research projects. During the year eight industrial scholarships were awarded, largely to graduate students, amounting to $2,871.41. Furthermore, during the year approximately $50,000 was received by the College from the FERA and WPA to carry on research work. While these moneys were given for the employment of unemployed scientific and technical men they were used in nearly every case to further research already underway or to carry on new projects in research.

It would not do to over-emphasize these special incentives for research as being of more importance than the regular research projects underway under the able direction of Director Fred J. Sievers, of the Experiment Station. Approximately fifty-two projects, supported in large part by Federal Funds are underway at the College, at the Waltham Field Station and at the Wareham Cranberry Station. The interest of the groups served by the Waltham and Wareham Stations is significant and, of course, very helpful. The organized nurserymen of the State were instrumental in securing a special appropriation last year for the carrying on of

research work in nursery practice at Waltham and the organization has appointed a committee to work with the Station. The value of the research work done here at the College and at the two sub-stations is not only unquestioned by the Agricultural interests of the State, but is warmly and aggressively approved. It has been my hope since coming to the College that we may not only strengthen the research work in Agriculture and Home Economics, but that the interest of the teaching staff in research in their fields of activity might be stimulated. Unfortunately, the teaching burden is so heavy that few members of the teaching staff have time for research, yet there is every reason to believe that, within reason, a teacher who is exploring in a particular field of activity is the better teacher because of the effort.

In the effort to secure improvement in both teaching and research, it is exceedingly important that opportunities may be given not only to our scientific staff but to our entire professional staff to keep contact with their professional organizations and, particularly, with meetings of these organizations. Experience of colleges and universities throughout the land has proven beyond a doubt that it is a good investment for the college and for the State, where the institution is state-supported, to have the members of teaching and research staffs attend scientific and professional meetings fairly regularly. To shut a man up on the campus and not make it possible for him to contact his colleagues at scientific and professional meetings is sure to result in stagnation, if not a worse condition. The fact that members of our scientific and professional staffs habitually pay 50% of their expenses is striking evidence of the concern of our people in keeping abreast of developments in their particular fields of work.

The present administrative organization of the Commonwealth by which the Massachusetts State College is grouped with the penal and charitable institutions of the State for financial control places a handicap upon the proper development of teaching and research. It is furthest from my thought to imply any criticism of the Commission on Administration and Finance for, without exception, its members have been very cordial and considerate of our proposals and needs. However, it is obvious that the needs of an institution whose objectives are education and research are quite different from other types of State institutions and should be considered from a different point of view. We shall continue our work under a serious handicap as long as we are forced to conform in mattters of salary classification, travel, and even in some degree in purchases, to standards set up for administrative and eleemosynary departments of government. This fact must be recognized and changes must come if we are to render the kind of educational and research service to the people of Massachusetts which they have a right to expect. The problem, it seems to me, is basic in the law and relief can be secured only through legislative action. The greatest service which the Trustees of the College could render to the College during the next few years would be to achieve an arrangement by which the needs of the College could be considered and supplied on the basis of educational standards rather than those general standards which are now applied.

Student Interests

The Dean of the College, William L. Machmer, in his able report on the student situation at the College, which will appear in the printed Annual Report of the Officers of Administration of the College, emphasizes the improved opportunities for effective study by students and for expression of student interests. He has described most effectively the influence of the new Goodell Library and the new men's dormitory, Thatcher Hall, as incentives to study and to more satisfactory living among students. It is almost inconceivable that a new library, even as effectively organized and manned as the Goodell Library, could affect a student body as our has been affected in the way of increased interest in library work, in study in the Library, and in the development of a finer spirit of scholarship. The housing of all resident freshmen on the Campus, which was possible this past year for the first time in a number of years, through the opening of Thatcher Hall, has done much to bring prompt adjustment of new students to the college program and a more wholesome attitude on the part of students toward living and working together in dormitories.

To me, the increased opportunities for the expression of student interest has been a significant accomplishment of the year. The formation of a Press Club among

the older students has not only improved the college paper, but has interested a substantial group of students in radio writing and in the preparation of material for student contests. There has been a marked advance in the interest of students in music. The addition to the Faculty last year, for the first time in the history of the College, of an instructor in music has been more than worth while. The presentation by the students during the past fall of a Gilbert and Sullivan opera was outstanding and could never have been accomplished without the direction of the work by a thoroughly trained instructor. The building of a new College Band, with the raising by the student body of $1,000 for uniforms, has given another fine opportunity for expression by the students of their interest in music. Under the able leadership of Professor Frank Prentice Rand, Head of the Department of Languages and Literature, the work in dramatics at the College is equaling the best of similar work at the older privately endowed institutions of the State. Debating among the women students of the College has had a sound development during the year and within a few months there will be held at a convocation of the student body a debate between our Women's Debating Club and a similar Club from Rhode Island State College.

Increased Cultural Opportunities

As has been indicated to you before, it is my opinion that the College is very fortunate in its student body. The great service which the College has rendered to the Commonwealth through the years has been making possible four years of college work at a very low cost for an increased number of boys and girls from families of moderate means. A number of instructors who have come to us during the past year and who have taught at other institutions have commented on the serious-minded attitude of the student body, of their determination to get the most from four years of college work. Such an attitude is a challenge to the entire staff of the College. It is to be expected that, with such a student body, there will be an increasingly fine response to efforts of the College to offer opportunities for self expression and cultural development. In all of this, it is the aim of the staff to see that our graduates are not only prepared to effectively meet the requirements of an increasingly difficult economic situation, but that they shall be capable of taking leadership in whatever community they may locate to take up their life work.

While there may have been question in the early days of the activities of Land-Grant Colleges, as there seem to have been in the early days of engineering schools and colleges in this country, as to the desirability or necessity for cultural opportunities for students, there is no longer such question either in the Land-Grant Colleges or in the engineering colleges. It has become increasingly apparent as graduates of the Land-Grant Colleges; and also the engineering colleges; have gone out into active life, that the failure of these colleges to surround their students with a reasonable amount of cultural interests and activities has been a serious handicap. That this is true has been evidenced in many ways. For years there was some question as to the admittance of graduates of Land-Grant Colleges to the leading professional organizations in the fields of education, science, etc. In other words, there was a feeling for many years on the part of the older classical and liberal institutions that the graduates of Land-Grant Colleges did not fully measure up to the cultural and other standards fixed by these organizations. In my own experience of nearly thirty years of more or less direct contact with Land-Grant College work, I have had many complaints from graduates of Land-Grant Colleges as to the failure of these colleges to give students the cultural advantages that would make it possible for them to take their places as well-educated people in community life, in business, and in scientific activities. Repeatedly I have had letters from graduates indicating that scientific instruction and training given by the College was splendid but that it was unfortunate that the writer had not been brought into contact with the best in literature, music, art, and in other fields of knowledge, the possession of which seemed to mark the well-educated man.

It can be said with emphasis today that the situation has changed largely and that in most every one of the Land-Grant Colleges a cultural atmosphere is being developed that is going a long way in making their graduates fully qualified as well-educated people. The acceptance of the membership of the Massachusetts State College in national organizations of colleges and universities is very direct evidence

of improvements that have been made in cultural opportunities for students at the College.

It is in place to recognize the influence of increasing numbers of women students in the Land-Grant Colleges. While older Alumni of Massachusetts State have questioned from time to time the acceptance of increasing numbers of women students, there can be no question but that the presence of over three hundred women students on this Campus has added greatly to the cultural life of the College. For some reason governing boards and the administrators of Land-Grant Colleges have been entirely ready to acknowledge the necessity for instruction in what might be indicated as the cultural things in life for women students. Why there should be question of the need for the same instruction for men students, it is difficult to answer.

There are underway increasing cultural opportunities for students at Massachusetts State and it is the strong opinion of your President that this is decidedly a move in the right direction. If leadership is an objective in the educational activities carried on at the College, then it is extremely important that as our graduates go out into the world they shall be ready to meet groups of people everywhere on an equal footing, as far as being educated people is concerned. Why shouldn't a graduate in Agriculture from the Massachusetts State College, as he takes up work on the outside, and as he works with groups where he is expected to exercise leadership, have a real appreciation of good music, a knowledge of the great artists and their works, and be in contact with the great writers? To repeat, it is our contention that every graduate of the Massachusetts State College should be a well-educated person.

There has been a marked increase in what might be called a cultural atmosphere of the College during the past five years. There is more and better music on the Campus. There are monthly art exhibits put on under the direction of Dr. Frank A. Waugh, which are creating greater attention and interest on the part of both the student body and the Faculty. The new Goodell Library, under the leadership of Mr. Basil B. Wood and an able Committee of the Faculty, is being made a cultural center on the Campus.

Student Leadership

Under a previous heading, the fine character of the student body of the College has beer discussed briefly. The very fact that the student body at the College are appreciative of the true meaning of an education and are determined to get the most out of their college experience evidences a situation which in these times is probably not characteristic of this College alone and that is that students are keenly interested in affecting reasonable control of their own activities and reasonably effective leadership in their own group. If the College is to accomplish the objective of an education for leadership, then that leadership should begin while the student is in College.

It gives me unusual pleasure to express at this time to the Governing Board of the College the fine accomplishments of the present student body in the development of leadership of their own activities in the fields of music, drama, public speaking, athletics, as well as in the carrying out of effective work in clubs in their own field of work, such as in Agriculture, Horticulture, Chemistry, History, etc.

It is possible, of course, that a situation may develop where students may feel that because they are able to lead in their own activities they should extend this leadership into fields which must of necessity be under the control of the Governing Board and the Administration. There has been little evidence of this spirit on the part of the student body during the past year. On the contrary, it seems that the students are unusually appreciative of the problems of the College as a whole and are cooperative in their attitude toward the efforts of the College to meet and solve the serious problems which have come as a result of increased student body with the resultant lack of sufficient man power in the teaching staff and insufficient facilities for the most satisfactory teaching and laboratory work. There has been marked evidence of the fact that because the student body comes largely from families of moderate means, from families where hard work is still recognized as bringing the greatest satisfactions of life, that they are very appreciative of the opportunities offered by the State through the College. This, of course, makes it easier and

pleasanter to work with the students, not only as far as the classroom and laboratory are concerned, but in all extra-curricula activities. It will continue to be the aim of the Administration of the College to build into the lives of the students the feeling that as college people they must learn not only the necessity for control of their own lives, but that they must recognize the opportunity for constructive leadership in every student activity of which they are a part.

Campus Events

The use of the campus and college facilities for educational meetings by people of the State continues to increase. Our records show that approximately 52,000 persons attended such meetings on the campus during the past year as compared with slightly less than 42,000 persons the year before. There were 104 conferences and meetings of various sorts which attracted these people to the College. When it is considered that these events are planned and carried out quite in addition to the regular resident instruction program of the College; which of itself includes the Graduate School, the Undergraduate School, Stockbridge School of Agriculture, Summer School, Winter Short Courses, etc., all of which have increased in student enrollment, it can be somewhat appreciated that the College campus was a very busy place in 1935.

The Sixty-Fifth Commencement

The College was honored at the graduation exercises of the Sixty-Fifth Commencement by the presence of His Excellency James M. Curley, Governor of the Commonwealth and President of the Board of Trustees, who delivered the address of the occasion and presented diplomas to 191 candidates for the bachelors degree, to 28 candidates for the master of science degree and to six candidates for the degree, doctor of philosophy. Because of inclement weather the exercises were held in the cage of the Physical Education Building instead of the Rhododendron Garden as planned. This was the first experience in holding exercises of this sort in the Physical Education Building and it seemed to be the consensus of opinion that the facilities were very satisfactory.

CONFERENCE ON CURRENT GOVERNMENTAL PROBLEMS

A new venture was undertaken this year in the holding of a conference on Current Governmental Problems on April 5 and 6. Professor V. A. Rice served as chairman of a faculty committee on arrangements. A program of interest and significance was arranged and a very satisfactory conference held. While the attendance was not large, it seemed to indicate an interest in this type of educational effort on the part of the College, which would warrant a continuation of our efforts in this direction.

Dedication of Goodell Library

One of the outstanding events of the year was the dedication of the Goodell Library. The exercises took place on Thursday, November 6, 1935. The program arranged by the faculty committee on the library featured the splendid services of former President Goodell and emphasized the importance of the College Library and the great addition which Goodell Library makes to the facilities of our College.

The program was composed of two parts; one a special student convocation in Bowker Auditorium in the forenoon, and the other a dedicatory exercise in the large general reading room of the Library in the afternoon. The principal speakers were Dr. Joseph L. Hills of the class of '81, Dean of the College of Agriculture of the University of Vermont; Dr. Charles S. Plumb of the class of '82, Professor Emeritus of Ohio State University; Clarence E. Sherman, Librarian of the Public Library of Providence, Rhode Island; Dr. Davis R. Dewey, Trustee of the College and John L. McConchie, President of the Student Senate.

STAFF CHANGES

Seven members of the Staff resigned during the year and there were two retirements. Resignations included: John C. Baker, Extension Editor; Arthur B. Beaumont, Professor of Agronomy; Mary J. Foley, Instructor of Agricultural

Economics; Jay L. Haddock, Instructor of Agronomy; Claude R. Kellogg, Assistant Professor of Entomology and Beekeeping; Richard T. Muller, Assistant Research Professor of Nursery Culture and Cecil C. Rice, Instructor of Horticultural Manufactures.

Two professors reached the age of retirement after long service to the College: Professor John E. Ostrander, Head of the Department of Mathematics, retired on June 30, 1935, and Fred W. Morse, Research Professor of Chemistry, retired on December 6. Expressions of appreciation and good will were extended to both of these men by the Faculty and they were elected by the Board of Trustees, Professors Emeritus.

Losses by Death

Concerning the sudden death of Dr. Kenyon L. Butterfield on November 26, the Board of Trustees has ordered inscribed upon its official records the following statement:

The sudden death of Kenyon Leech Butterfield on November 25, 1935, was a significant loss to the Massachusetts State College for, through his long service as its President and, since his retirement, his continuing activity in a field with which the College is so intimately identified, he was both an inspiration and a guide to those now directing the work of the College. To many members of the Board, his death brought a keen sense of personal loss because of their intimate acquaintance with him during the years of his administration.

Dr. Butterfield guided the development of this College through eighteen crucial years energetically broadening its scope of service to the Commonwealth and providing facilities that this service might be effectively rendered. Great as was his contribution to the College, his service encompassed a much broader field, that of rural progress throughout the world. Through his vision of high ideals and his strong efforts to accomplish progress in the approach towards those ideals, rural people in America and in those foreign lands where his influence has been felt are finding a better life.

In recognition of the outstanding service which he rendered to the College governed by this Board and to the ideals for which that College stands, it is hereby unanimously voted that the above statement be inscribed upon the official records.

Because of ill health Miss Lorian P. Jefferson, Assistant Research Professor of Agricultural Economics, retired from active service on July 31, 1935, and her death occurred in Amherst on December 30. Miss Jefferson rendered long and efficient service as teacher and researcher at the College and her passing is a very real loss to the College.

Mr. Wayne J. Lowry was killed in an automobile accident on May 20, 1935, while he was in active service for the College as Instructor in Horticulture. Mr. Lowry was a young man of great promise and his colleagues and many friends greatly mourn his tragic and untimely passing.

Gifts

The College was fortunate to receive during the year the bequest of $4,500 from the estate of Miss Betsey Pinkerton of Worcester. This bequest is for the purpose of creating two scholarships for students in the College, who are residents of the City of Worcester.

We are grateful also for the gift of $5,000 from Mrs. Henry Lang secured through the good offices of Dr. Joel E. Goldthwait for the purpose of supporting special research in the field of nutrition.

Planning For The Future

In any Land-Grant College in the country, particularly where the character of instruction has been largely scientific and technical, and generally in the fields of Agriculture and Horticulture, an increase in student body such as has taken place at Massachusetts State in the past ten years of approximately 80% brings problems that are difficult always, and at times almost discouraging. Without exception, the Departments have been meeting the increased burden of work willingly and courageously and in an effective way. Teaching and research both have improved

at the College and there can be no question but that the educational activities of the College are on a sounder basis today than ever before.

The situation as described above, resulting from rapid growth in student body has been demanding sane and forward-looking planning, both that teaching and the living conditions for students may be improved and that physical plant may be so organized and developed as to take care of growing numbers without lowering standards of work or without creating housing and living conditions for students that are below standards recognized as reasonable among the colleges and universities.

Preliminary to forward-looking planning for the College, it has seemed desirable to have careful studies made both of the curriculum and the physical plant. Reports on studies of curriculum which were made by committees of both the Faculty and the student body have already been made to the Board; in fact, copies of these reports are in your hands and I hope that it has been possible for you to go through them. During the past year a committee of the Faculty has been making a thorough study of physical plant to determine whether we are making the most effective educational use of all buildings. Reports have been coming in from this committee from time to time and already some improvements have been made. Before the committee is through with its work every building used for educational purposes will be thoroughly studied to see whether the building may be more effectively used for classes, laboratories, study rooms, etc. As the studies of curriculum will be discussed under another heading, the necessity for forward-looking planning will be applied at this point to the physical needs of the College.

Reference has been made from time to time to the several campus plans which have been presented in years past. In my report of two years ago, hope was expressed that it would be possible within a year or two to bring to your body a campus plan of a character that would make possible the most effective development of the Campus. By your direction, a Campus Planning Council, with Dr. Frank A. Waugh as Chairman, was set up for a study of the Campus and for the preparation of the planning. This Council is still at work. Therefore, I am unable at this time to do more than report progress. The Council has emphasized certain building needs and it seems desirable to again bring these needs to your attention.

The occupation of the Goodell Library, the beneficial effects of which upon the student body have already been described, leaves vacant the old chapel building. Plans have been drawn for the reorganization of this building to be used both as a chapel and as the headquarters for the Social Science Division. Effort was made to have the restoration of the old chapel included in the PWA projects which were submitted during the past fall by His Excellency, the Governor, to the Federal Administration. The project was included in His Excellency's list but for some reason was turned down at Washington. By your action, this failure to secure Federal money for the reorganization of the building resulted in including in the budget for this year a special item of $39,000 for that purpose. Expenditure of this amount of money will give us another very much needed building on the Campus. At the present time the work of the Social Science Division is scattered over the Campus. It is being carried on in buildings designed for teaching of Agriculture and Horticulture and similar subjects and, therefore, it will mean much in the development of the work in Social Sciences to have the old chapel available as the center for the work. Because of the pressure for classroom and office space, immediately that the chapel was vacated by the Library, rooms were cleared out and it is now being used almost to capacity for both offices and classrooms. It is hoped that your body may be of assistance in securing necessary funds for the reorganization of this building.

A second needed reorganization of an old building on the Campus is reflected in an item of $40,000 in the College Budget for the present year for the reorganization of South College as an Administration Building. There has never been an Administration Building, so-called, on the Campus and the result has been that, from the beginning of the College, administrative offices have been scattered among a number of buildings. Gradually, during the past twenty years, administrative activities have been brought into South College, which was built originally as a dormitory and occupied for many years by students; in fact, it is safe to say that the rentals from students who have occupied the building for many years, has more than

reimbursed the State for the cost of the building. Beginning with the present year and under your authority, the final group of some fifteen to twenty students was moved from the west section of the building, which is now occupied to capacity to take care of an overflow from the Dean's Office, to provide for the first offices which the Department of Home Economics has ever had and to take care, temporarily, of certain Federal Activities, particularly the men assigned to this district under the Resettlement Administration. The Dean's present office, which was originally a classroom is in no way suited to the handling of a student body of over 1,000. There is no room for committees and conferences in the building, except the President's Office, and this means that the President is often put to inconvenience because of necessary meetings of committees and conferences. The growth of the Extension Division, which occupies a portion of the north wing of the building, has crowded its staff to the doors.

A careful estimate made by Mr. Louis W. Ross, architect for Thatcher Hall, based on studies of the building, indicates that $40,000 would reorganize the building so that it would be a reasonably satisfactory Administration Building. It is hoped that the Trustees will interest themselves in securing funds for this reorganization.

Your body is familiar with the efforts which have been made during the past three years to secure either Federal or State funds for the building of a Women's Building. Plans, satisfactory to the Department of Home Economics, the Extension Service and the Experiment Station, have been prepared. Decision by your body has been made as to location of building and an item of $250,000 is in the present budget. The Advisory Council of Women has interested itself and proposes to continue effort to secure the building. The action last year by the State Federation of Women's Clubs was very helpful and it seems now as if the State Federation will continue to make an effort to secure the building. Work for women is being done in some seven buildings on the Campus and there is no one building that may be indicated as the center of women's work. If the College is to continue as a coeducational institution, and it is so committed to coeducation at the present time that there is strong question as to whether a change will ever be made, it must provide as satisfactory facilities for women as for men. It is not fair to the increasing numbers of young women who have been coming to us to carry on women's work at the College as if that work was merely grafted onto a men's college. Your continued interest and help in the securing of a women's building will eventually bring the building.

Another urgent need is that of the completion of Marshall Laboratory, now occupied by Bacteriology and Physiology, as quarters for Physics and Mathematics. The Department of Physics is housed in the first wooden building built on the Campus; namely, the old Botanical Museum. A one story wooden extension was added to the building many years ago and the present crowding of the building is both unsanitary and unfair to students. By your authority there is an item in the present budget for $150,000 for this building. It must come if the College is to do satisfactory work in Physics and Mathematics.

It would be out of place to close this discussion of needed buildings without emphasizing the need for an auditorium building large enough to take care of our present student body to say nothing of any growth that may come in the future. Bowker Auditorium, in Stockbridge Hall, seats a few over 900. With an undergraduate student body of 1,065, it is more than evident that we cannot bring together at one time our entire undergraduate body, to say nothing of the Stockbridge School and the Graduate School. Rough plans have been drawn for an Administration Building with an auditorium to seat 3,000 people and with provision for room in the basement where up to 1,000 people may be fed and, also, provision for classrooms and offices. An auditorium to seat approximately 3,000 people would not only take care of our student body of today and allow for approximate growth of fifteen years, but would also make possible the bringing to the College of conferences and conventions of citizens of the State interested in the field of work of the College, which cannot now be accommodated.

Two requests were received during the past year for the holding of conferences and conventions which would have meant a great deal to the life of the College and to a better understanding of the College by people of the State, but because these two conferences required an auditorium to seat from 1,000 to 1,500, we had to turn

these opportunities down. I refer to the annual meeting of the State Federation of Women's Clubs and to a State Boy Scout Conference. Three hundred thousand dollars would be little enough to build the kind of an auditorium which the College should have to carry on its work satisfactorily.

There are several minor needs in the way of buildings which must be met before long if the work of the College is to be carried on economically and efficiently. These needs are:

(*a*) Central garage building which would make possible the housing of all college machines, with proper repair shop, storage, etc.

(*b*) A vegetable gardening storage house. There is no place on the Campus now where products of gardens maintained by the Department of Vegetable Gardening can be stored.

(*c*) The completion and furnishing of the Hatch Barn, which is being reorganized for small animal and biological laboratory.

(*d*) An incinerator to take care of increasing quantities of refuse from buildings and Campus. At the present time all refuse is dumped at a point on the Farm which is difficult of access during the winter and which makes an unsightly and an unsanitary situation.

(*e*) Additional bull pens for the Farm. The Head of the Division of Agriculture has been asking for additional bull pens for ten years and almost for that time items have been in the annual askings of the College, but have never been allowed.

Last year His Excellency, the Governor, asked all State departments and agencies for recommendations as to a 25-year building program. Under your authority a statement was filed with His Excellency. It is my recommendation that this 25-year building program should be given further study by the Trustee Committee on Buildings and Grounds in cooperation with a committee from the Faculty and that the program should be gradually brought to the attention of the people of the State.

The necessity for sane and forward-looking planning, both for an increased student body and for meeting the needs for an enlarged physical plant has been recognized at the College for several years. With the possibility that the Federal Government may continue to appropriate moneys for needed construction through the country, it would seem wise to bring to a head the planning for physical improvement of the College so that opportunities may be taken of Federal and State plans for continued construction.

Service to People Living on the Land

Through the past several years emphasis has been placed upon the fact that the College, because of its program of education and research, is the one agency in the State that is in a position to give effective and continuous service of a helpful nature to people living on the land throughout the Commonwealth. For more than seventy years the program of work at the College has recognized that the College is obligated by both its Federal and State Charter to work continuously with people living upon the land to the end that such people may not only be more effective in carrying on the industry of agriculture, but that living conditions may be more worth while from every standpoint. Your body recognizes the fact that this worth while service of the College to the people living on the land did not begin with the development of what is now our Extension Service.

Former President Butterfield, during his eighteen years of constructive service to the College, was always concerned with assistance by the College to the farmers of the State. It is possible that neither the College nor the State has recognized fully the service which former President Butterfield rendered to Agriculture in the Commonwealth. It seems a little unfortunate at times that former President Butterfield's leadership in, and splendid contributions to, improvement of rural life in the State is recognized more nationally and internationally than within our own Commonwealth. The work which Dr. Butterfield did while at the College from 1906–1924 in organizing and carrying on the work that would improve rural life has served splendidly as a foundation for the development of an Extension Service in Massachusetts which is second to extension work in no other Land-Grant College in the country. It seems fitting at this time to emphasize the fact that the

extension work of the College in the fields of Agriculture and Home Economics, under the able direction of Willard A. Munson and with the leadership of the College, carried out through county organizations, is an activity of very great educational importance to all of the people living on the land in the Commonwealth. It is the aim of the administration of the College to see that this work is continued and improved to the end that all of our people who live upon the land may live fuller and more satisfactory lives.

In describing briefly the service which the College is rendering through its Extension Service and Experiment Station to those who live upon the land in the Commonwealth, it would be in place to reaffirm and to emphasize the position which the administration of the College has taken during the past three years as to the furtherance of educational opportunities in Agriculture at the College and as to service through the Extension Service and the Experiment Station to every person living on the land in the Commonwealth. This body is familiar with the fact that no opportunity has been overlooked to emphasize to audiences and to individuals throughout the State that the College is a Land-Grant College and that agricultural instruction at the College will always be one of its most important activities. One of the first conferences which the President of the College had after taking up his work early in 1933 was with the Head of the Division of Agriculture. During this conference one question was asked from several different angles and that was, "Is the College today giving as effective instruction in Agriculture as it has given in times past?" The answer of the Head of the Division of Agriculture was strongly in the affirmative. This fact has been emphasized as indicated, though it has seemed wise to say in speaking of agricultural instruction at the College that the position of the College is that we are teaching not less Agriculture, but more of the liberal and cultural subjects to the end that every boy and girl who goes out of the College shall be a well educated person.

Naturally, with an increased student body there should be question now and then on the outside as to whether Agriculture is less important at the College today than previously. Whenever this question has come up, it has been answered as it has just been answered to you. Recently, there has been question as to whether the College Farm is being maintained and operated on a satisfactory basis from the standpoint of the agricultural interests of the State. This is answered most decidedly in the affirmative. The proportion of annual expenditures of the College devoted to Agriculture in all of its phases, including Horticulture, is very large; much larger perhaps than is justified from the point of view of the students alone. If justifiable, it must be from the point of view of its contribution to the Extension and Research programs of the College.

Adjustments to Required Economies

Beginning with 1932, the annual appropriations for the College by the State Legislature decreased steadily. These decreases in the face of the growing student body required economies that not only brought the College some very difficult and definite problems, but forced the cutting of activities with results which may be felt at the College for some years to come. Fortunately for the work of the College, the cuts in personnel items were absorbed largely by salary reductions without diminution of staff. Reductions in maintenance items, such as repairs, replacements, etc., were more difficult to absorb. Constant effort has been made during the past four years to increase the items for repairs and replacements particularly. Where the replacement item ran along for several years at approximately $20,000, it is evident that when the item was cut to $6,000 and kept there for several years, it has been increasingly difficult to take care of necessary replacements. Equipment in laboratories, on the Farm, etc., etc., has had to be used beyond the point of safety and efficiency until today equipment in many cases is simply beyond repair and activities dependent upon this equipment must be discontinued unless increased funds are forthcoming. One of the outstanding examples of this wearing out of equipment due to lack of funds for replacement is the Dairy Department. Depreciation of dairy equipment is rapid and the point has been reached where it is manifestly out of the question to maintain standards of instruction without replacements. In such equipment there is not only depreciation but obsolescence so

that not only is the equipment for ice cream manufacture, particularly, worn out but it is not modern and up-to-date.

In 1932, in meeting the needs for economy and under authority from your body, the Summer School, which had been carried on for many years at an approximate cost of $5,000 per year, was eliminated. It was felt that it would be easier to make a large cut in a single item than to spread the cut over activities generally. In taking up the work here early in 1933, and in going over the program of the work of the year, it seemed to me that it would be exceedingly unfortunate for the College to permanently discontinue its Summer School work. Again, with your authority, Summer School work was offered in 1933 at a cost of $1,000 instead of $5,000. The results were better than expected and every summer since 1933 the Summer School has been continued with increasing numbers of students, although at a cost not exceeding $3,000. As the Summer School is somewhat self-supporting and as it serves a large group of teachers in the western part of the State as well as making use of the plant of the College during the summer season, it is the opinion of the Faculty Committee on Summer School that results of the past three years have justified efforts and that the School will grow steadily from this time on. One reason for the restoration of the School in 1933 was the feeling that two or three week courses in vocational subjects might be offered of a character and in a way that would attract unemployed people. These short term vocational courses were only moderately successful with the result that the number of courses was cut materially in 1935 and in the Summer School of 1936 none of these courses will be offered.

In one way, it may be said that the College has completed adjustments for required economies. This is on the assumption that State appropriations to the College will be maintained and perhaps gradually increased. However, as indicated above, the effects of enforced economies will be felt in teaching and research and in operation of plant for a number of years to come. Only through loyalty and cooperation of the teaching staff and all having to do with research, extension and the maintenance of the Campus has it been possible to carry through economies without seriously injuring standards of work. The teaching staff accepted the reduction in salaries, put into effect throughout the State, without a complaint. Fortunately the reductions have been restored and through the efforts of His Excellency, the Governor, last year funds were appropriated which made possible the restoration of the step system; that is the system which provides for step increases in salaries from a minimum to a maximum rate. However, the inability of the College to add needed instructors, and this difficult matter of relation of number of instructors to increasing student body is presented most graphically in charts prepared by Secretary Hawley, has resulted in what might be termed as an abnormal depreciation in the strengthening of the teaching ability of the loyal men and women making up the teaching staff. No teacher can increase the number of hours of his teaching by from thirty to fifty per cent and the number of students handled by the same percentage without eventually weakening under the almost impossible burden. It is my opinion that the teaching staff of the College is now carrying so heavy a burden that it will be very difficult to maintain standards, to say nothing of affording teachers the opportunity for a certain amount of constructive scholarship. How can a teacher who is carrying from thirty-five to fifty per cent greater load than is supposed to be a normal load in colleges and universities generally, at the same time keep up in reading and in effective preparation of material and in research? Expression has been made earlier in this report of a feeling that teaching at the College is being improved. This is a correct conclusion and yet the time has been reached where a relief must be given through additional personnel or the total number of students accepted by the College must be reduced. Everyone interested in the College, the Trustees, the Alumni, friends of the College through the State generally, and particularly the administration of the College, are keenly interested in seeing that the College maintains its high standards of work. It is my strong belief that these standards are threatened and must be lowered in time if relief does not come through additional personnel.

This particular problem, which could be much enlarged upon, involves not only relief through additional personnel but involves recognition of the necessity for incentives to good teaching and to the maintenance of standards. It is my purpose

to discuss at the May meeting of the Board somewhat fully this question of what the College may do in offering incentives to its teaching and research staffs to the end that better individual work may be done and with greater satisfactions and standards maintained as they should be if the College is to hold its position in the educational program of the State.

The Road Ahead

It has been well said that in this period of readjustment in both the economic and social life of the country that change seems to be the only definite and tangible factor in the situation. We are all very sure that changes are taking place, particularly in the economic life of this country. We are not sure as to just what these changes are and to what they may be leading us. To those of us interested in and concerned with education, it is as evident that changes are taking place in education as in economics or the social life of our people.

Several times since coming to the College it has been my privilege to indicate to your body the changes which have been taking place in the Land-Grant Colleges of the country and, at the same time, to emphasize that changes equally as momentous have been taking place in our fine old liberal and classical institutions. Because Massachusetts State is not connected with a State university there have perhaps been fewer changes than have taken place in many of the other Land-Grant Colleges, particularly in the Middle and Far West. There has been a trend in the Land-Grant Colleges toward a broadening of the base of the work of the college with much needed recognition of the necessity for liberal and cultural work for students in Land-Grant Colleges that these students may be well-educated people as they go out into the world. As far as actual instruction is concerned, there has been but little change at Massachusetts State in the last five years. In other words, few new courses have been added. The change has been rather in the interest of the student body as evidenced by the great increase in the selection by the student body of majors in Social Sciences and Physical and Biological Sciences. Certain reorganizations have assisted materially in meeting the needs of the changing interests of the student body without increasing greatly the requirements as to staff and facilities. Under your authority, the work in Economics, History and Sociology has been radically reorganized. The new Department of Economics, under the leadership of Dr. Cance, has already proven the value of this reorganization. The new Department of History and Sociology, under the leadership of Professor Mackimmie, has attracted increased numbers of students. The new Department of Agricultural Economics and Farm Management under Dr. Lindsey has made a fine start.

In what has already been done in meeting the needs of students, there is every evidence that there is a questioning of the road ahead for the College. From the time of the questionnaire sent to every member of the staff early in 1933, through the studies of curriculum made by a Committee of the Faculty and the student body, the question as to just what kind of a college we are and what seems to be ahead for us has been asked repeatedly. A report was made to your body on the results of the questionnaire of early 1933. As indicated at the time of the report, the chief purpose of the questionnaire was to stimulate thought and discussion as to the College and its immediate future. It is my opinion that the questionnaire was successful in stimulating both thought and discussion. In 1934 the Committees appointed from the Faculty and the student body for a study of the curriculum, profiting by the discussion resulting from the questionnaire, presented reports of very definite value to the College Some of the recommendations in the reports of these Committees have already been carried out, such as the reorganization of Economics, History and Sociology, and the reorganization which is now planned for Engineering work at the College.

During the past few months, and partly as a result of the reports of the Committees referred to above, a group within the student body has been agitating, through the college paper and in other ways, the idea of the granting of the A.B. degree by the College. The interest of a portion of the student body in the A.B. degree and their agitation through the college paper, from one standpoint, is a fine thing for the student body and the College. Unfortunately, such an agitation on the part of a student body may become a crusade, making it difficult to apply careful thinking based upon all of the factors which may affect such a change. It

is not my thought to criticize the student body in this particular agitation. They have been considerate of the College and its administration and particularly careful to see that the agitation was confined to the college family and not taken outside for discussion or trial in the public press. Up to a certain point the reasoning of the small group of students definitely concerned with this matter has been fair and right. They see that subjects in the field of Humanities as taught at this College are as well taught here as at institutions about them. They are confident that the program which they are allowed to take, which now leads to the B.S. degree, is comparable to the program taken by students in colleges about us where the B.A. degree is given. They have determined that in a few cases anyway, graduates of the College have found that the B.S. degree has not been as helpful, particularly where graduates have entered the teaching profession, as the A.B. degree might have been. These considerations loom large in the minds of the students who are agitating for an A.B. degree and it is my opinion that they are honest in their convictions and their opinions should be given consideration.

It is, of course, difficult, if not impossible, for a group of students in a college such as Massachusetts State to appreciate all of the factors involved in the changes which would be necessary to make it possible for the College to give the A.B. degree with the same high standards of work as it is now maintaining in the granting of the B.S. degree. They fail to appreciate, also, the effect which a decision by your body to grant the A.B. degree at the College might have upon the friends of the College through the State, or the State Legislature. The fact that a student may take a program here that is much the same as the program of another student in a neighboring college which leads that other student to the A.B. degree makes it seem to our students that little if any change in the life and the work of the College will be necessary in the granting of the A.B. degree. In other words, most of the students concerned feel that all that is necessary is the action of the Board in authorizing the Administration and the Faculty to carry through a program which will lead to the granting of the A.B. degree. The fact of the matter is that decision at this time or later to grant the A.B. degree at the College would change very considerably the objectives of the College. We have built up a splendid reputation as a scientific and technical institution of high standard with our main work leading to the B.S. degree. It would seem unwise at this time to change the objectives of the College or to attempt to change the atmosphere of our work in such a way that we would be in a position to offer at the same time work leading to an A.B. objective.

The friends of the College in the State who have given fine support through the years, are groups interested in Agriculture in all of its phases and these groups are apparently ready to continue their fine support. It would be unfortunate, particularly at this time, to alienate the interest and support of the groups which through the years have meant so much in the upbuilding of the College. If these groups were alienated, there would be no other groups with the same interest and strength to take their places. For instance, the State Grange, the Farm Bureau, the various organizations in the field of Animal Husbandry, Fruit Growing, etc., etc., are keenly interested in the work of the College.

In this discussion, let me emphasize the fact that your President and the Administration at the College are not opposed to the idea of the A.B. degree at a Land-Grant College. We are, however, of the opinion that it would be untimely for your body to authorize the granting of an A.B. degree now. It is probable that the time will come when conditions will justify such action on your part, but we hope it will come as a matter of sane and sensible evolution in the College rather than a sudden change which would require hasty changing of objectives and hasty reorganization of work. We feel that there are so many important problems ahead of us at the present time in the program of teaching and research, and creating wholesome living conditions for our youngsters that we would not be justified in taking on burdens which we are not now prepared to carry. And, yet in all of this, let me emphasize that we feel that it is wise to question as to the road ahead for the College. It would be unwise, if it were possible, to remain just as we are as far as our program of instruction and research is concerned; in fact, the College, if it is to exercise leadership, must keep its eyes on the future and try in an intelligent way to determine how to meet future changes in our economic, social, and cultural structure.

It is my opinion, after three years of work at the College, that Massachusetts State is very fortunate in its Trustees, its Faculty, its Alumni body and its students. It is my strong feeling that there are few other institutions similar in character to Massachusetts State where there is finer loyalty and support than we are receiving from Trustees, Faculty and Alumni and certainly, our student body. Such progress as has been made at the College during the past few years has been made because the Administration and the staff have had the keen interest and the loyal support of your body, of the Alumni, and the student body. It is essential that conditions be maintained which will insure your interest and loyalty, that will cause the Faculty and student body to continue their hard work and their loyal support. My pledge to you is that all that I have will be given to maintaining conditions which will make for the right progress of the work of the College.

Hugh P. Baker,
President.

STATE FUNDS BUDGET FOR 1936

The budget for 1936 is based upon requirements of the program of the preceding year. Increases are necessary to meet the additional costs of new services established in 1935 such as the nursery research program, the elm tree disease program, etc. Also additions are included to meet the increased cost of salaries and new positions in accordance with 1935 commitments.

General Maintenance

	1936 Personal Service	1936 Maintenance Expenses	1936 Total Budget	1935 Appropriations
1. General College	$406,580	$103,050	$509,630	$486,745
2. Experiment Station	118,227	26,050	144,277	120,400
3. Extension	75,643	32,500	108,143	97,360
4. Short Courses	54,485	10,925	65,410	59,470
5. Heat, Light, Power	–	61,000	61,000	50,000
6. Physical Plant	120,000	32,000	152,000	124,150
7. Fertilizer Control	12,415	3,850	16,265	15,270
8. Poultry	19,525	5,250	24,775	23,185
9. Milk Testing	600	500	1,100	1,060
10. Feeding Stuffs	10,635	4,000	14,635	12,670
11. Seed Control	5,130	1,400	6,530	6,735
12. Dairy Cattle	3,250	1,650	4,900	–
13. Trustee Expenses	–	1,200	1,200	1,200
14. Printing Reports	–	1,300	1,300	1,300
Total	$826,490	$284,675	$1,111,165	$999,545

Special Appropriations, 1936

The Trustee Budget for special appropriations for 1936 included seventeen items totaling $596,400. The first four items are for the construction or reconstruction of major buildings, the fifth is for important land purchase, the next nine for permanent campus improvements, and the last three for special services.

Buildings Urgently Needed

1. Reconstruction of Old Library $39,000

With the completion of the new library, now under construction, the old building will be liberated for much needed classroom use. However, in order to make the building available for this purpose, certain interior reconstruction will be necessary as well as some equipment. Plans have been prepared which involve no change in any of the major construction features of the present building. These plans provide for the construction of three classrooms, twelve offices, and a small auditorium in this building. With our increased enrollment, this additional classroom space is urgently needed and its provision in the old library building can be accomplished most economically.

2. Women's Building $250,000

At the present time the work of the Division of Home Economics is carried on in seven separate buildings on the Campus, in laboratories which were originally constructed for other purposes and which have been adapted to this use as well as has been possible. Not only does the present arrangement handicap the instruction work in this field, but due to increased student enrollment, such laboratories as we have are overcrowded to the point where some other arrangement is very urgently needed. The current enrollment of 289 women students in the College is an increase of 43% in the last six years, and is an indication of the growing need for providing adequate facilities for women's work on the Campus.

3. Physics Laboratory $150,000

Present facilities for instruction in Physics at this College are very inadequate. The department is housed in an old wooden frame building which is much too small to accommodate the number of students taking courses in the department, and which does not afford the opportunity for precision measurements and other laboratory exercises which are very important in this field.

At the time the present bacteriology laboratory was constructed in 1915, plans were prepared for a complete building of which the present structure is only half. The other half of this building would house very efficiently the Department of Physics and it is the proposal herein to complete the bacteriology building and thus afford proper and adequate facilities for the Department of Physics.

4. Reconstruction of South College to House Administration $40,000

This building was constructed in 1885 for dormitory and classroom use. Gradually it has been taken over for administrative offices until it is now used entirely for that purpose. The present arrangement of rooms and lack of toilet facilities make it very inappropriate for office use and it is the purpose of this project to reconstruct the building so that it will be able to effectively serve its purpose.

5. Purchase of Land

a. Tuxbury Land—30 acres $7,000

This land adjoins the property of the College on the north and has been leased by the College for 24 years. The present lease expires in 1936. This land is needed by the College for use of the Experiment Station and the expiration of the present lease appears to be an opportune time to purchase.

b. Dickinson Farm—60 acres and buildings $12,000

This property adjoins the Tuxbury Land on the north and is very desirable. It is the homestead of the late Marcus Dickinson, for many years trustee of the College. The buildings are very substantial and this price for which it is available to the College is only a fraction of its value.

c. Powers Land—½ acre and buildings $2,500

This property is practically on the campus being surrounded by College property on three sides and it is very close to College Buildings. No chance should be taken of its getting into other private hands.

d. Avery Land—6 acres $5,000

This property adjoins college land on the south and should be owned by the College particularly since it is close to site where it is planned to locate buildings for women students.

e. Stone Property—1 acre and buildings $10,000

This property adjoins Avery land and controls access to it from the south. The substantial house could be used to very good advantage by the College.

f. Hays Property—1 acre and buildings $4,000

This is entirely surrounded by college land and its acquisition by the College is important.

Other Needed Improvements

6. Completion of Biology Laboratory, Hatch Barn $9,500

This laboratory is urgently needed in connection with the work of our Experiment Station in its investigations in the fields of human and animal nutrition. Some reconstruction of the former Hatch Barn for this purpose was accomplished in 1934 at a cost of approximately $7,500. The amount requested herein would complete the reconstruction and addition to the building.

7. Rebuild Laboratory Tables, Bacteriology $3,000

The present tables with their plumbing and electric connections are too high and too wide so that it is extremely difficult for women students to use them for their laboratory work. With proper reconstruction and additions as contemplated herein it will be possible to accommodate 16 more students per section in the laboratory, make demonstration work more efficient and make it possible for work to be done with more comfort to the student.

8. Additional Bull Pens $3,000

For demonstration and educational purposes, the College maintains six breeds of cattle, and in order to carry out a sound breeding program, it needs to maintain two bulls for each breed. At the present time, we have facilities for only six bulls, or one for each breed, and this proposal is for the construction of additional pens to house six more bulls.

9. Master Clock System $2,400

This proposal is to control present clock system with one master clock working in conjunction with turbine regulators for controlling frequency such that electric clocks can be used and kept in step with clock systems. Present independent clock system is not satisfactory.

10. Extending Electric System to Harlow Farm $2,000

This project is for extension of electric system from present east terminal to Harlow Farm a distance of approximately 2,500 feet and the reorganization of overhead lines in that section of campus. This will obviate the necessity of purchasing electricity for Harlow Farm and will be a much more efficient organization of lines to the east.

11. Incinerator $3,500

All the institutional rubbish is at the present time dumped in one section of the College Farm. This is expensive and unsanitary and the need is urgent for some modern facility for disposal. Plans have been prepared for the construction of an adequate incinerator at the cost indicated.

12. Improvement of Telephone System $10,000

The College has completely outgrown the present telephone system by which some 200 phones are handled through one switchboard by one operator. The telephone company has made a careful study of the situation and recommends the installation of a dial system. They will install such a system without cost to the College, but it will be necessary for the College to construct an underground cable system between buildings for which this item is intended to provide.

13. Fire Protection $15,000

In line with the suggestion of His Excellency, Governor Curley, we have had made a thorough study of fire protection needs on this campus by State Building Inspector Ernest E. Cleveland. His recommendations we are adopting as we are able. The amount requested herein will permit substantial progress in the program which will cost in full approximately $50,000.

14. Reconstruction of Campus Roads $16,000

Many main campus roads are of gravel and cinder construction, expensive to maintain and inadequate for the heavy traffic which they bear. There is also need for some new road construction to serve new buildings. It is planned to use these State Funds as basis for federal W.P.A. appropriation so that it should be possible to build approximately 4,000 feet of much needed macadam construction.

Special Funds

15. Extension of Feed Control Research $5,000

This proposal is to supplement control service in Commercial Feeding Stuffs as conducted under the provisions of Chapter 94 of the General Laws. Its purpose is to make possible a study of the claims of commercial dealers as to the values of vitamin content in feeds. This service is self-supporting financially in that fees are charged for inspection and even with this extension of the service it is expected that receipts will cover all costs.

16. Aid to Students $5,000

This fund is used each year to aid worthy and needy students to pursue their college course. It is paid for labor in worth while work on the campus.

17. Emergency Fund $2,500

Use to meet emergency situations in productive departments and only with approval of the Governor.

REPORT OF THE DEAN

A changing social order, a shifting of emphasis in the schools, and the better understanding of the college throughout the State are bringing to our campus not only more students but also students whose interests are different and to whom our traditions are a closed book.

With the College organized and directed on a plan admirably adapted to a small college of six or seven hundred students—mostly men—changes and modifications had to be made in order to build up a wholesome student morale and continue to hold fast to those forces and customs which have such a profound influence upon student life.

To do this, new emphasis was placed on the program of our freshman week, additional provisions were made for social and group meetings, more attention was directed towards fraternity and sorority life, and no effort was spared to continue unimpaired the fine democratic atmosphere which has always characterized our student body.

To bolster up a noticeable weakness in class organization so valuable in the development of desirable student activities and student leadership, this office gave considerable attention to this problem during the year, centering its main effort on the members of the class of 1935. Fortunately the class had among its members many strong leaders who welcomed suggestions and accepted the challenge of working towards definite social and cultural objectives. The results were gratifying and were reflected in a Senior Convocation program at which one member of the class delivered an outstanding address and another presented to the College on behalf of the Class a valuable painting which now hangs in the new Goodell Library. Then followed a class banquet at the Lord Jeff Inn at which nearly every member of the Class was present. Later came Class Day, Commencement and the Sophomore-Senior Hop—in all of which the members of the Class discharged their responsibilities most creditably. The result was that all three events were by common agreement most successful and enjoyable. We have every reason to believe that a precedent has been set which will grow into a worthy tradition.

Another development which helped student morale came through the organization of a truly representative College Band. With very little assistance from the Administration, the students, through their various organizations, raised enough money to buy band uniforms. As a result we now have a student Band which is a distinct credit to the College. The services of a good bandmaster have been secured in order to develop the talent available.

Use of New Buildings

The new college year, 1935–1936, opened with Thatcher Hall and the new Goodell Library ready for use. The first building makes possible the housing of all Freshman men in dormitories under conditions directly controlled by the Administration. While it is too early to point out advantages, one significant result is apparent. It has tremendously heightened the morale of the new students. Freshman women were again assigned to Abigail Adams Hall and Draper Hall. This arrangement helps the new students to make the transition from secondary school to college more quickly and easily than was possible when they were housed off-campus.

The new dormitory is in direct charge of Dr. William Ross, an instructor in the Physics Department, and four student proctors, one residing on each floor. A set of simple rules sympathetically administered has built up a spirit of cooperation and pride stronger than we anticipated. No single building with the exception of the Goodell Library has done more to make for a contented student body.

Fraternities and Sororities

In a similar way we note definite progress towards more wholesome living conditions in the fraternities and sororities. The students are taking pride in their houses. Although many of the houses are too small and rather poorly adapted to fraternity needs, a serious effort is made to keep them neat and orderly. Inspection by members of the faculty Committee on Student Housing is welcomed. One fraternity employs a house mother. Theta Chi is building a new chapter house. All except one maintain a dining room. The efficient management of sororities is exerting a wholesome influence on the fraternities.

There are now eleven recognized fraternities and five sororities. On November 1, 1935, the membership in the fraternities was 257. The number of pledges was 236. This makes a total of 493 members and pledges out of a total enrollment of 764 men students, or sixty-four per cent. The members and pledges are distributed among the four classes as follows:

	Members	Pledges	Size of Class
Class of 1936	93	2	153
Class of 1937	101	13	176
Class of 1938	63	70	197
Class of 1939	0	151	238

In common with fraternities in other colleges our fraternal groups have passed through a very trying period. Scarcity of funds and a change in student attitude made it necessary for fraternities to take an inventory of real values. Searching questions were being asked by potential pledges. Are fraternities worth the price of membership? Are housing conditions satisfactory? What definite values may a student get from membership in a fraternity? The new demands during a changing social order threatened the very life of the fraternities and called for very definite changes. The challenge was real and I am happy to report that every chapter is apparently solving its problems and strengthening its position.

The sorority members and pledges are distributed among the four classes as follows:

	Members	Pledges	Size of Class
Class of 1936	47	2	68
Class of 1937	37	7	63
Class of 1938	25	19	78
Class of 1939	0	47	89

The members and pledges of sororities number 184, or 61.7 per cent of the women students in the College.

Building Needs

No one unfamiliar with conditions in the old Library can ever realize fully how great a student need has been supplied through the opening of the new Goodell Library. Could the people of the State really know how such buildings affect the more than fourteen hundred students now on our campus, one can not help but feel that they would be promptly provided.

The President's report this year will call attention to other building needs. From the standpoint of the undergraduate group three of these are outstanding. The Physics and Mathematics building, a Woman's Building and an Assembly Hall. During the present semester 181 are enrolled in the various courses in Physics and 540 in Mathematics. To take care of these students, Mathematics classes are scheduled in five different buildings in class rooms not well adapted for the most effective teaching. The Physics Laboratory is badly over-crowded and wholly inadequate. With increased demands for new courses and larger elections in courses already offered in both Mathematics and Physics more class-room and laboratory facilities must be provided without delay.

The growing importance of Women's work demands added recognition. Its needs can not be adequately met until a separate building is provided for them. Surely the peculiar needs of 300 women students can not be denied much longer.

Bowker Auditorium seats nine hundred and forty-four. With an undergraduate student body of ten hundred and seventy it is impossible now to have Convocations or Assemblies for the entire student body. It is also too small for entertainments, concerts, plays and conferences and conventions for outside organizations and groups desirous of holding meetings at the College. Indeed, a larger auditorium is a major need.

The Curriculum

The reorganization of Economics work at the College by placing Agricultural Economics into the Division of Agriculture and transferring all other Economics courses into a department of Economics has corrected an annoying situation in a very effective manner. Strong curricula are now available in the two departments. The demand for courses in this field is increasing.

The importance of Mathematics as a basic course is very generally recognized by nearly all the departments of the College. The students have also sensed its value with the result that all elective courses have increased in enrolment and many requests for new course offerings have been made.

The demand for substantial work in Engineering still persists. Engineering merits a definite place in this College and plans are being made for the creation of a department which will gradually evolve into a Division. Since the courses ordinarily required in the first two years are already available this new major can be introduced without very heavy initial expense for equipment and new instructors.

Very few new courses were approved during the year, but much attention was given to the strengthening of our regular offerings through revisions, adjustment of credits, and better coordination.

Since the results we obtain with any student group are quite dependent upon the effectiveness of our teaching, every effort is being made to fill vacancies and new positions with the strongest teachers we can employ at the salaries we can afford to pay. The new instructors brought to the College this year may be rated as superior.

With the increased number of students in the Division of Social Science has come a demand from the students for the granting of the A.B. degree. This has considerable support from the faculty and many interested alumni and alumnae. The request has merit and its acceptance is foreshadowed. The administration appreciates the validity of the arguments in favor of the proposal but doubts whether the College has or can obtain immediately the facilities needed for the organization of a Division to offer the type and variety of courses leading to an A.B. degree of unquestioned merit and high standing. With the question of specific requirements for the degree distinctly unsettled even in the privately endowed classical colleges there seems to be no necessity for hasty action on the ground that our graduates are not able to compete for certain positions because they have the B.S. instead of the A.B. degree. We must have the assurance that a curriculum can be offered for an A.B. of high standing before the new departure can be officially sanctioned. It is my opinion that further study is necessary to see whether the new departure can be made without jeopardizing the work leading to the present B.S. degree, which is at present recognized by all accrediting agencies. It would be unfortunate, too, if the granting of this degree should result in materially reducing the number of students who come from middle class homes of the industrial families or if it should divide our campus faculty and students into two competing camps.

Student Aid

The problem of student aid is not new, but recent economic conditions have given it a new emphasis. A recent survey of eastern colleges showed that, on an average, out of 200 students in college 100 need assistance. Of these 50 are cared for by the institution, 25 have positions outside, and 25 have no help at all. Out of 1,021 students enrolled in our undergraduate courses during the college year 1934–1935, 560 or exactly 50% earned a total of $32,869.06; $5,000 of this amount came from the State Special Emergency Fund Appropriation, $18,000 from the FERA and the balance from Trust and Departmental Funds. In addition, 188 students received scholarships amounting to $7,015. Further aid was afforded through loans amounting to $11,000 granted to 184 students. If one were to include scholarships and loans from sources outside the college at least $10,000 would have to be added to the above amounts.

Since the average yearly expense is not much in excess of $510, the College is making it possible for the student of meager means, but good individual ability, to continue his studies on the college level.

An effort is made to prevent inferior students from attempting to work their way through college. It is sometimes a kindness to turn back ambitious students who attempt to climb the heights beyond their native strength. A student who is compelled to work many hours loses many of the advantages of college, his circle of friends is narrowed and his mind is dulled for class-room work. Many working students are under a physical strain which undermines their health. There are far too many boys and girls in college now who are leading unstable lives and do not know where the next dollar is coming from. The effect on the college is plain.

Extra curricular and social activities suffer for lack of participants. The human tendency to aid exceptionally needy students who have not exceptional ability lowers the scholastic standards of the college. Prospective students and their parents must be made to see more clearly the true situation about college costs and educated to the fact that more than average ability is needed to work one's way through college. A great deal of time has been given to administer student aid wisely and effectively.

The Faculty

The staff members who served as Freshman Advisers this year were Mr. Boutelle, Miss Briggs, Mr. Briggs, Mr. Cary, Dr. Fessenden, Dr. Fraker, Dr. Goldberg, Prof. Gore, Mr. Helming, Asst. Dean Lanphear, Dr. Lindsey, Dean Machmer, Mr. Marston, Dr. Miller, Miss Skinner and Mr. Troy.

With the faculty organized for administrative purposes on a divisional-departmental basis the necessity of more frequent meetings of divisions and departments is apparent and I am glad to report that such meetings have become not only more numerous but also more purposeful. Questions relative to courses, interdepartmental cooperation and better methods of instruction were discussed. I am convinced that we can not afford to overlook any opportunity to strengthen our teaching. The criticism made in a letter which I received recently from a student in another college is one which points to a common weakness which should be corrected. Here is the student's charge:

> "Yesterday I had a written in Education and I hate to think of how poorly I did in it. The question was—'What to you are the most striking points of contrast between the American system and the various European systems of Education.' I was floored. I knew the material necessary but I didn't know how to organize it. The more I think about it the more I believe there is one fundamental evil in our method of teaching. All of my classes but one—and that is German—are lecture courses. When I come to an exam such as the above, I don't know how to express myself. All my knowledge has been, as it were, just poured into my head without my having a chance to express any opinions about it."

The year was a strenuous one for both faculty and students. But from the standpoint of actual achievement both in curricular and extra-curricular activities it must be ranked as one of the most satisfactory in our history.

William L. Machmer,
Dean.

REPORT OF THE DIRECTOR OF THE GRADUATE SCHOOL

The Graduate School at Massachusetts State College represents an expansion of the facilities for resident teaching into the field of more specialized study than that made possible in regular organized classroom instruction. It is only reasonable and quite sound that the opportunities for advanced study are closely related and proportionate to the developments in the undergraduate college. There have been no pronounced changes in the number of students enrolled nor in subject matter offerings during the last several years. The enrollment of 120 students in the graduate school this year while somewhat higher than before, nevertheless, represents no greater increase than should be anticipated from a larger undergraduate student body. There is, however, definite evidence that the enlarged general interest in courses other than agriculture or physical and biological sciences is beginning to express itself in the demands made by students in the graduate school. It may be only a matter of time before we will be required to consider the advisability of granting majors in fields that, up to now, were not considered in our province.

The field of study at present covered is possibly best indicated by a list of theses titles for dissertations presented for graduate credit at commencement time in June, 1935.

Titles of Theses

The Order Ranales in Massachusetts
The Validity of High School Principal's Certificates for Forecasting Success at Massachusetts State College
Dickens' Relationship to Tobias Smollett
A Study of the Interrelationships of Intelligence, School Marks, Home Environment, Personality, and Conception of Values
Nutritional Studies on Mackerel
Comparisons of Ciders made from Several Varieties of Apples with Special Emphasis on the Effect of Clarification Treatments on Composition
Study of Rural Credit in Certain Areas in Massachusetts
Biochemical Investigations on the Cranberry
A Comparison of the Occupational interests of the Graduates of the Springfield Public High Schools with the Cathedral Parochial High School Graduates.
The Construction of the Athol High School Scholastic Aptitude Test and a Study of its Comparative Validity in Predicting Success among School Children
The External Morphology and Phylogenetic Position of the Woodland Cave Cricket
An Economic Survey of the Springfield Fluid Milk Market
A Study of the Errors in Written Language of Deaf and Hearing Children
Studies of the Effects of Cation Ratios on Tobacco
A Survey of the Leisure Education Programs of the Smaller Public High Schools in Western Massachusetts
The Study of Media Employed in, or Suggested for, the Bacteriological Analysis of Water
Prognostic Testing in Typewriting Through Manual Dexterity and Intelligence Quotients
Some Internal Physical Conditions in Glass Containers of Food During Thermal Treatment
Glutathione Content of Dormant and Growing Plant Tissues
The History of the Growth, Development and Present Status of Catholic Secondary Education in Massachusetts
Corn Sugar Utilization in the Manufacture of Horticultural Food Products
Directional Orientation in Human Beings
Community Canning Projects in the South
Dissolved Iron as a Means of Separating Escherichia Coli and Aerobacter Aerogenes
Status of Ice Hockey in the New England Colleges
The Effect of Decreased Budgets upon Public Schools in Massachusetts
A Further Study of the Synthesis of 5, 5-Alkylphenylbarbituric Acids
Nutritional Studies on Crab Meat
Studies of the Microbiology of Dried Foods
Studies on the Bacterial Content and Methods of Preventing Spoilage of Commercial Fish
Studies in Bacterial Carbohydrates
The Acids of the Cranberry
Factors Influencing the Rate of Decomposition of Different Types of Plant Tissue in Soil, and the Effect of the Products on Plant Growth
A Study of the Effect of Neutral Salts upon the Dissociation of Benzoic Acid by Means of the Catalytic Decomposition of Ethyl Diazoacetate

Of the above theses twenty-eight were submitted to satisfy the requirements for the Master of Science degree and six for the Doctor of Philosophy. The enlargement of our facilities for work in Home Economics in the Experiment Station is affording increased opportunities for graduate study especially in the field of Human Nutrition. It is conceivable that this should express itself in an increased enrollment and a demand for more service in that and related subjects.

In general, the quality of product of the graduate school is rated very highly and in that respect serves as a distinct compliment to the instructional staff.

F. J. Sievers,
Director.

REPORT OF THE DIRECTOR OF SHORT COURSES

In June, the president awarded fifty-three diplomas to graduates of the Stockbridge School of Agriculture, this being the smallest group to complete the two-year, non-degree vocational course in agriculture in nearly ten years. This class had entered in the fall of 1933 with an enrolment of one hundred students, the lowest registration since 1929. The apparent mortality of forty-nine students in the brief period of two years might be considered an appalling weeding out if those figures alone told the whole story. Our records show just what happened to those students who did not complete the full course and also indicate that many of them were still able to continue in school for some part of a helpful training program best suited to their individual needs.

Actual failures in class work accounted for eighteen, three of whom came back in 1934 as freshmen to repeat the course successfully, and will graduate this coming June. Ten students withdrew from school voluntarily, two of whom entered other colleges and the others had varying reasons for leaving. A few each year find it difficult, because of character defects chiefly, to adjust themselves to the life of the College.

Because of limited finances two students could complete the first year only, including placement training, and then remained at work for one year to earn sufficient funds to return to school this year. They are now enrolled in the present senior class greatly benefitted by the additional experience they have gained and with sufficient funds earned to fully pay their expenses.

Nine students took less than the required program for graduation, an adjustment we sometimes allow to fit the special training needs of students where they are competent to carry subjects in most of the prescribed courses. In several of these cases students have minor deficiencies in their scholastic work which can be met another year.

Two students did not return for the senior year after completing satisfactorily both class work and placement training, and four students failed to qualify with passing records in the six months practice period. In such cases a student who fails on placement is disqualified for the diploma in the same manner that he would be had he failed in class work. He is usually not allowed to return for the senior year until a satisfactory employment record, demonstrating his efficiency and ability to do the work on the job, has been secured.

One student was requested to withdraw because of mental instability, and three students, otherwise eligible for the diploma, left school before the end of the senior year to fill positions impossible of postponement until June. I am sure that those who study this record carefully will be convinced that our Stockbridge teaching staff is making every effort to give the capable and earnest student, honestly interested in the agricultural field, a full measure of opportunity here. When one recalls that no entrance examinations are required for this work, and every student is accepted, provided he is at least seventeen years old and has completed as a minimum eighth grade schooling, the wonder is that so many are eager to meet the rigorous requirements for rural living, and successfully complete the prescribed program.

Registrations of the Stockbridge School of Agriculture have made a gratifying increase since the low point of 1933 as shown by the following figures for entering classes during the past three years: 1933–101; 1934–129; 1935–142. Ninety-seven seniors returned to school this year making a total enrolment in both classes of 239.

Wild Life Management Course

At the instigation of President Baker, a faculty committee has been faithfully at work to organize a special training course in wild life development and conservation, dealing with game birds, animals, and fish. On the basis of their recommendations an introductory course has been established in the fall of 1935 as a new major. This work started with an initial registration of sixteen students and the numbers accepted will be closely limited, selecting only those whose records seem most favorable, to insure the highest calibre of trained workers. It is hoped that state parks, forests, private game farms and preserves, and state game farms, will find ready use for, and excellent service from our graduates in this course.

Professor Robert P. Holdsworth of our Forestry Department is actively directing this work, and with the new professorship of Game Management established this year, the development of the teaching program will be greatly aided.

The Vincent Goldthwait Loan Fund

Mention should be made here of the great service the Vincent Goldthwait Loan Fund, established by Dr. Joel E. Goldthwait of the Class of 1885 (College), has rendered to Stockbridge students. From about 1922 through 1929 Dr. Goldthwait had, from time to time, aided various worthy students, usually seniors, whose cases had been called to his attention by the Director. Most of these men would have had to withdraw from school if it had not been for this timely financial assistance.

In 1929 an amount in excess of $5,000.00, including loan notes still outstanding, was turned over to the College as a permanent loan fund in memory of the doctor's only son, Vincent Goldthwait, who died in 1922 when a junior at Harvard College. Since 1930 this fund has been of invaluable service to many young men to enable them to complete their education, as the following tabulation shows:

Class	Total Amount Loaned	Number of Students Aided
1930	$325.00	5
1931	1,404.50	12
1932	2,830.00	20
1933	1,672.50	18
1934	1,085.00	15
1935	1,077.00	11
1936	395.00	10

Including the loans made prior to 1930 a total of more than ten thousand dollars has been used to assist more than one hundred students, in amounts ranging from $15.00 to $350.00, and for periods of one month to two years. Without interest charges and with repayments possible after graduation the loans have been of especial service during the last few critical years.

Winter School

Attendance has been well maintained in the unit short courses held from November to April in what we commonly call our Winter School program. Most of the courses are conducted by members of the college staff in addition to their usual teaching loads, and in a few departments with heavy teaching programs some temporary assistance has to be provided. Courses, periods, and enrolments are given for 1935.

Course Name	Dates of Course	Enrolment
Poultry:		
Unit I	Nov. 19–28: Dec. 3–11, 1934	6
Unit II	Dec. 12–19: Jan. 2–11, 1935	7
Unit III	Jan. 14–Feb. 1, 1935	7
Greenkeeping	January 2–March 14	13
Dairy Bacteriology	January 2–12	10
Milk and Cream Testing (Course I)	January 14–19	25
Milk Plant Operation (Course II)	January 21–26	22
Ice Cream Making—Beginners (Course III)	January 28–February 2	20
Ice Cream Making—Advanced (Course IV)	February 4–February 9	26
Forestry	January 28–February 2	45
Tree Warden	March 25–March 30	32
Vegetable Gardening	April 8–13	6
		157

Summer School

Registration in credit courses jumped from seventy in 1934 to one hundred thirty-two for 1935, due mainly to the replacement of eight Education courses in the program. Courses of this type are in particular demand by employed teachers and others preparing for teaching positions.

A special service was provided in a series of five one-week canning courses to train workers for community canning plants. Professor William Cole of the College Extension Service was in general charge of organizing this work throughout the State. A large number of towns and cities paid the expenses of selected ERA workers to come to the College for this special training, not available elsewhere. Some seventy-three people were registered in these unit courses.

ROLAND H. VERBECK,
Director of Short Courses.

REPORT OF THE LIBRARIAN

The past year has been another noteworthy one in the history of our library since during 1935 our fine new building has been completed; our book collection has been moved into the building; and the library is now practically settled in its new quarters to the great satisfaction of all concerned. The building proves very practical, and has already brought increased use of books. The opportunity for quiet study needed for so many years, is much appreciated, judging both from increased use of the reading-rooms, and from enthusiastic statements of our students.

The moving was accomplished from August 10 to September 15, and required the continuous services of about twenty-five student assistants, two members of the staff, and two other workers with a truck. Handbarrows, and boxes holding a single shelf, were also used to much advantage.

During 1935, the library has added 2,337 volumes, of which 1,688 were purchases, and 688 gifts. Nineteen volumes were withdrawn, making a net gain of 2,299 volumes. This brings the total of books in the college library system to 102,613 volumes. About one-third of these are in the branch or department libraries, of which there are now forty-seven, of widely varying sizes.

The building has been open for study and borrowing of books 354 days out of the year, and 14,835 books and 257 pamphlets have been loaned out. The months of largest borrowing were March, with 1,906 loans, January with 1,837, and November with 1,594. The classes of books most used were, literature, 3,646; useful arts, including agriculture and horticulture, 1,903; sociology and education, 1,574; periodicals, 1,216.

In many ways the needs of the library seem now to be well supplied for years to come, but there is need for more books for certain departments, although this need may be partly met by readjustment of our regular apportionment of funds.

B. B. WOOD,
Librarian.

REPORT OF DIRECTOR OF PLACEMENT SERVICE

The work carried on by the Placement Service is increasing from year to year. We are broadening out in the scope of our activities, particularly in the field of vocational guidance, employment opportunities, job specifications, etc. A considerable part of the time of the three members of this department is spent in conferences with students along the above lines. Material is being continually gathered which may assist students in reaching an intelligent decision for themselves after having thought the problem through in their own way. The art and powers of vocational guidance are rather limited and although experience in counseling and some knowledge of qualifications for different types of work at times may justify the offering of definite occupational advice, in general it does not seem either possible to do this with assurance, or wise to exempt an individual consultant from the responsibility for his own choice.

Agricultural Placements

Placements made during the year in the fields of agriculture and horticulture totaled 98. Fewer alumni made applications for employment leads and there were more opportunities for employment available, which would lead to the conclusion, and rightly I believe, that employment conditions in general in the fields of agriculture and horticulture had improved over last year. Owing to the small number of men majoring in these fields in the college group, in most cases the departments can and do readily place the majority of seniors each year.

The following table is a summary of the occupational activities of the men graduates of the class of 1935.

Enrolled in Graduate and Professional Schools	39
Employed in Agriculture	15
Employed in Landscape Architecture	8
Employed in Industry	20
Employed in Teaching	6
Employed in Government Service	7
Unemployed	16
No Information	30
Total	141

Last year the division of agriculture put more stress on recommending that undergraduates in their field be employed during the summer vacation along the lines of their major work to gain practical experience which would aid them to benefit more from the class work and also better prepare them for a position when they graduated. I agree thoroughly with the principle and think that every undergraduate should be required to work at least one summer. There are jobs available in June for the men in the division of agriculture but it would be somewhat more difficult I believe to put such a plan into operation for the men in the division of horticulture because July and August are the dullest months of the year in most types of work in that division. At the request of the agriculture division the writer gave two talks to the undergraduates on employment possibilities, wages, job requirements, etc.

Women's Placement

For women students the work of the Placement Office has shown steady growth, both in putting them in contact with positions and also in assembling vocational material for their use and giving vocational advice.

During the first semester all women students desiring self-help and summer jobs are interviewed and as far as practical are aided in securing jobs which will be helpful to their major interests. A special effort is made to have their summer work an educational experience to strengthen their college work and to help them in securing a position after graduation.

In the early fall all senior women interested in work after graduation are asked to come in for interviews. New vocational information and opportunities are constantly being brought to their attention and contacts made to aid them in getting into new as well as old fields of work.

By December 1, 1935, 61 of the 69 present senior women had sought one or more interviews. Between September 1934 and September 1935, there were 888 student interviews. Ninety-four women students have been given some work on Special Emergency or N. Y. A. Funds. Positions for others have been found on Department Funds or from employers among the townspeople. Places to work for room and board have been found for fifteen students.

In addition to the above, since January 1935, 86 women have been placed in summer and other temporary positions, some of which may prove permanent, and 19 graduates have been helped to secure permanent work.

Part Time Student Employment

Part time student employment is cleared through the Placement Office. During the College year 1934–35, 560 students earned a total of $32,869.06.

The 1933–34 part time student employment program offered opportunities for four hundred twenty-five students to earn a total of $24,700.90. The enlarged program of the past year was due to the fact that the E. R. A. program was in operation the entire period of 1934–35, whereas it was only in operation a few months during the preceding year.

E. R. A. Projects

Since October 1934 the Placement Service has been supervising the Scientific and Technical E. R. A. Projects.

The Public Education, Arts and Research Projects, with special emphasis on agricultural activities, employed an average of 22 people and their total earnings from October 1, 1934 to November 27, 1935 amounted to $22,410.75.

A Shade Tree Pest Control Project was initiated at the College June 6, 1935. This project has employed an average of 16 people whose earnings up to November 21, 1935 were $7,687.94. The project was state-wide in nature and embraced field work with a laboratory service at the college.

Stockbridge School Placement Training (Men)

One hundred one freshmen in the Stockbridge School were placed for summer training. Considerable difficulty was experienced in finding sufficient jobs for the 14 dairy majors and for that reason the writer anticipates a real task in finding dairy employment for the 26 freshman enrolled in that department for 1936. The new course of Wild Life Management will present some real problems in Placement Training for that group of 16. Opportunities in General Horticulture especially in the larger nurseries were considerably improved over the past few years.

Emory E. Grayson,
Director of Placement Service.

SYNOPSIS OF THE REPORT OF THE EXPERIMENT STATION

The complete statement of the research accomplishments of the Experiment Station during the year ending December 1, 1935 will be published separately as a station bulletin which will appear at an early date. Therefore, it should be adequate for purposes of this report to supply merely an evaluation of the program in its entirety and a summation of its objectives and ideals.

In our attempts to deal with the problems of agriculture through Experiment Station services, it has become recognized that the best interests of the individual operator quite commonly come in conflict with what is economically most sound for the industry. While the industry, in its entirety, reacts definitely to certain causes and effects, the individual units that compose the industry are not always influenced. It is mainly for this reason that many of the attempts to regulate the operations or to prescribe for the entire industry have not been received with sufficient enthusiasm by enough individuals to make them successful.

In the Experiment Station a realization of this fundamental principle has made the investigator so conservative that he has hesitated to project the results from his investigations beyond what could be supported by definite data obtained through an analytical approach. When urged to go beyond this, he has in some cases been willing to make recommendations for individual farms if he felt thoroughly conversant with the detailed operations but then only with a realization that his recommendation would not prove sound for the entire industry. While such services may have been relatively satisfactory when agriculture was reasonably profitable, it is not considered adequate when an industry is in economic distress.

There has been a feeling on the part of a large number of constructive statesmen that agriculture, in proportion to the prominent position it occupied in the Nation's business, was not getting its fair share of the financial return. The industry needed and deserved help. It needed the type of help that Experiment Stations could give if they expanded their field of operations beyond applied science and into the province of applied economics. Support for this type of development was provided by increased federal as well as state funds and researchers trained in the specialized

field of economics and farm management were added to the staff. Such supplementary service was intended to extend the influence of agricultural research beyond the horizon set by the applied scientist. This was a laudable objective and one that was accepted with enthusiasm but unfortunately with a decidedly limited background of experience. Economics was designated as the dismal science because it had been content to confine itself largely to matters of the past. The agricultural chemist had learned that, to meet the present day demands, it was not enough only to be familiar with the ideals and accomplishments of such pioneers as Justus von Liebig while the economist was still quite content to quote from Adam Smith. The science of economics had been concerned with looking backward only and now it was assigned the problem of prescribing for the present and also for the future. This necessitated the development of new methods and new viewpoints but under previously established administrations. It was only natural, therefore, that the methods of research that had proved effective in the field of applied science should be introduced here, viz., the analytical approach was used. Several years of relatively fruitless effort with this method, which accomplished little besides the amassing of mounds of data of a census nature, made it very convincing to some that research in the field of economics must vary its program if it was to overcome the limitations that were rapidly becoming recognized. The greatest need was not for more unrelated facts or data but for finding a relationship between those already available or within easy reach. This led to an attempt at correlation which required a type of cooperation with subject matter departments that heretofore had never been considered necessary.

This incentive for cooperation has been, and can be, even to a much greater extent, the most significant contribution of the economist to agricultural research. So long as economists operate independently and restrict their services to the confines of economics as laid down by departmental boundaries, their efforts will be of very limited significance in serving the agricultural industry. The public is demanding that our researchers project their results beyond what is justified by statistical data only. The specialist in applied science will do this to the degree that he is willing to develop the courage to express an opinion. His opinions will be respected as far as they are found reliable. If the economist can encourage him to venture further into this field and then cooperate with him in making sure that his venture is on a sound basis he will contribute much of the service that is demanded of him. It is believed that then and then only will we get sound and constructive service in planning for the economic future in agriculture. Progress in this direction is being made. It is limited only by the extent to which the economists are capable of realizing that this may be their most worth while service and the scientist to recognize that the results from his research may require an economic interpretation that he, independently, may not be qualified to supply.

Administratively every effort is being made to promote and develop relationships which will encourage this enlargement in our service. It is hoped, now that funds from Bankhead-Jones sources are available, added flexibility may be injected into our program thus to make the plan sooner and more generally operative.

F. J. Sievers,
Director.

REPORT OF THE DIRECTOR OF THE EXTENSION SERVICE

Our extension organization is meeting continually increasing requests for its services. It has been able to cooperate with many emergency agencies responsible for carrying out programs which were designed to relieve and assist those people whose earning power has been greatly reduced. In accepting these additional responsibilities it has been able to continue its educational program essential to farm and home success.

The opportunity for placing the educational facilities of the college more completely at the convenience of the people throughout the state is growing with each succeeding year. Members of the state and county extension staffs recognize fully the ever expanding field for educational service. With improved organization and direction of effort, coupled with assistance from expanding numbers of local leaders, they are enlarging their programs of work.

Problems of unemployment have emphasized the importance of municipal public welfare boards employing people to produce food, thus reducing the total cost of maintaining needy families. In 1934 one of our extension specialists worked out with the E. R. A. Administrator a system of gardens to produce vegegables for canning. Last winter these vegetables, amounting to 130,000 cans, were distributed to needy families by the welfare board. This year the same specialist was designated by the state E. R. A. Administrator to supervise all E. R. A. garden and canning projects within the state. Twenty-eight garden areas, covering approximately 500 acres, were established in as many different towns and cities. Thirty-two canneries were established, some in connection with these gardens but mostly as separate units. Six state-wide technical assistants were employed to assist in the direction of this work and two additional office secretaries were employed. The extension specialist and his assistants trained the 125 garden and the 175 canning supervisors. More than 1,000 persons were employed on these gardens and 1,270 were kept busy in the canneries. Four and one-half million pounds of produce were grown, and 1,000,000 cans of high quality vegetables were prepared for use during the winter of '35–'36. All of these products will be distributed through the welfare boards. In addition, eight 4-H club garden leaders and four 4-H club canning leaders were employed. The tremendous expansion of this work illustrates in a very dramatic way the possibilities of extension work, and is a striking example of what may be accomplished when an occasional project meets with emphatic public approval.

The Agricultural Adjustment Administration Program has had a more widespread effect on farm business in Massachusetts than is ordinarily supposed. The Boston Milk Market was under the direction of a milk administration established under a Federal license and market agreement authorized by the Agricultural Adjustment Act. Until February this Federal Milk Control measure maintained a stabilized market, affecting directly every producer who furnished milk to the Boston market and indirectly all milk producers in the state. During the period of the activity of the Federal Milk Control, farmers of New England received $3,400,000 more for milk than they had received previously. Dairy farmers in southern Massachusetts were benefitted similarly by a milk administration for the Providence, New Bedford, and Fall River markets. Shortly after an adverse decision regarding the constitutionality of the measure in Federal District Court, the price of milk to farmers was drastically reduced.

In the Connecticut Valley 1,230 out of a total of 1,250 active tobacco farmers have continued their cooperative effort towards the control of tobacco produced on the basis of a contract with the Secretary of Agriculture. The processing tax on tobacco paid by the manufacturers has yielded $520,000 to these growers in the form of benefit payments on their 1934 tobacco crop. The development of the organization for administering the program is assigned to the Extension Service. Fifty-five responsible tobacco growers serve on town and county committees to administer this program within their towns. A referendum on the 1936 program was conducted which resulted in an overwhelming vote for its continuance.

Agricultural Economics and Farm Management

Discussion groups were conducted in five counties with three to five meetings each to consider topics of importance in the agricultural situation. These discussions created considerable interest and helped to arrive at a better understanding of farm problems. Assistance was given the Federated Dairy Associations of Massachusetts in arriving at its form of organization and method of procedure. This organization has an active membership of 6,000. Price studies concerning apples, onions, and potatoes have been prepared for distribution to growers.

Business farmers agree that one of the essentials of good farm practice is accurate records. A state-wide inventory campaign was chosen as the means of developing interest in farm records. Seventy-five meetings were attended by 1,265 farmers. Twenty-three banks, four national farm loan associations, and three of the four Production Credit Association secretaries in Massachusetts cooperated. Fourteen vocational agricultural teachers helped by explaining the farm inventory to farmers, and instructed their pupils in its use.

Farm management studies emphasized the problem of operating poultry units to capacity. Two years' work with poultrymen has indicated that an increase of approximately 15 per cent higher capacity can be secured. A dairy farm business survey was made on 300 farms. Parts of the results of this survey have been presented to 850 farmers at 32 meetings.

Agricultural Engineering

Approximately 105 separate designs for farm buildings are now available for distribution. During the year 500 requests for plans were received and 50 barns and poultry houses have been built. Twenty ditch-digging demonstrations using dynamite were given and 300 acres of land were drained by this means. Seventy-five dairy farmers were assisted in securing a good water supply. Fifteen farm families were assisted in planning their heating equipment for the home. In all, 1,200 inquiries were answered on engineering problems of the farm and home.

Agronomy

Until recent years the Extension Service discouraged requests for chemical analysis of soils because of cost and inadequate methods available. With the more recent development of rapid method tests, a service similar to that provided by other states has been carried on in the past year in response to increasing requests for information from the citizens of the state. Sixteen hundred samples tested accurately for lime requirement, together with additional tests for other plant foods, have provided a basis for better judgment in making recommendations to those people with soil problems.

Owing to the recent tendency of farmers to grow more corn for grain, 66 varieties of corn were grown in test plots to determine the varieties most suitable for this purpose. Potato growers in five counties have demonstrated good spraying practices, proper fertilization, and seed treatment. One of the demonstrations resulted in an increase from 180 bushels from unsprayed to 427 bushels from properly sprayed vines.

Animal Husbandry

Two additional men were employed part time to study dairy herd breeding records in an effort to determine the extent of improvements taking place. This study will be made available to dairy farmers to emphasize the need of good dairy sires. Tuberculosis is no longer a problem as it has been eradicated, or practically so, from Massachusetts. Other animal diseases, however, such as Bang's disease and mastitis have been studied with farmers and instruction given to assist in their detection and treatment. Two new dairy improvement herd associations have been organized.

Forestry

Manufacturing sawdust and shavings for bedding is a new industry in Massachusetts, only four plants being in operation for this specific purpose. The business has developed in response to a demand for bedding on dairy and poultry farms when woodworking mills and shops are idle. A machine company has built a device on the plan of an ensilage cutter to manufacture this material. Cordwood, slabs, and other waste wood can be easily made into bedding by this machine. Approximately 150 farmers have been added to the list of cooperators who now manage their woodlots "crop wise".

Home Grounds

One feature article a week has been furnished to leading newspapers on home grounds improvement. About 2,000 people were enrolled in the outdoor living room and garden maintenance projects. Assistance has been given in planning and landscaping for town commons, school grounds, and other public properties.

Plant Pathology

Market gardeners have received instruction for controlling tomato blight, a prevalent disease of the tomato crop, by spraying and seed disinfection. Hundreds of plants have been examined for diseases in response to letters of inquiry. Crop Disease Notes have been prepared regularly and furnished to all extension workers who pass them along to farmers. The apple scab spray service has been continued.

Pomology

Winter injured apple trees have continued to be a major problem with the fruit growers. To assist in dealing with this problem, a publication consisting of a series of questions and answers was issued. It is being requested by 30 per cent of the growers in the state. In addition a series of 15 orchard meetings were held. It is expected that the study of soils in which apple trees are planted will have an important influence on the location of orchards in the future. Further studies of the effect of soils on root systems of trees will be made during the coming year.

Poultry

One of the biggest problems of the poultry industry is to maintain an even egg production throughout the year. Twenty cooperators have been working with the specialist on a plan to produce chicks in the fall as well as the spring to keep the laying houses filled nearer to capacity. Next year it is expected that the plan will be tried by many more poultrymen.

Many farmers are tattooing their poultry for identification and prevention of theft as suggested by the college in cooperation with the Massachusetts Department of Agriculture. Demonstrations have been given in the preparation of poultry for the retail market. Meetings have been held to explain the law covering the sale and classification of eggs known as the "fresh egg law".

Home Economics

The demands made upon lay leaders, home demonstration agents, and specialists have been exceedingly heavy during the past year. It has been necessary to employ part-time workers to help in meeting the requests of homemakers for assistance. While very few of our group members have been on relief rolls of the state, it has been only because of thrifty planning that many families have been able to carry on. Welfare boards and emergency workers of all types have turned to the home demonstration agents and to the specialists at the college for scientific information, counsel, and printed material.

The number of families taking advantage of our study groups was 23,400. The number of volunteer leaders who gave of their time, effort, and money to render service through the Extension Service was 3,700. In all of the home economics programs there has been very close cooperation with the State Departments of Education, Public Health, and Public Welfare; Grange, Parent-Teacher Associations, and the Red Cross.

The objectives of the home economics program for the past year have been:

To make it possible for groups of homemakers to come together with a leader to discuss their problems and, through an interchange of knowledge and experiences to get a store of information and a sense of values upon which to base choices, decisions, and accepted standards of living.

To encourage and inspire homemakers to *think* not only upon the immediate problems of family life but upon those social and economic problems which affect the family and the community.

To interest prospective homemakers in the study of problems which pertain to successful individual, family, and community living.

To assist community leaders in analyzing present resources and the utilization of these resources by all the people of the community.

Child Development and Parent Education

The trend of parent education for the year has been definitely toward family relationships which are essential to maximum development of the individual and the welfare and happiness of the family group. The time has been divided between laying the foundation for successful living in the early years of the child's life and a more intensive study of the problems of adolescence.

In the former project, the discussion centers around such relationships as are essential to developing the spirit of cooperation, self reliance, and a sense of security. In the latter project, problems of adolescence—physical, mental, social. and emotional growth and development—are the basis for study and discussion by the parents.

Because of the limited contacts with groups, this type of information seems more helpful as it serves as a background for working out techniques of guidance and a philosophy of family life. In order to work more intimately with groups and the individual members, the specialist has conducted more community groups and has visited those led by leaders.

In addition to reaching every county in the state in some manner, and working intensively in five counties through lay leadership, the specialist, in the capacity of chairman, has devoted much time to the organization and development of a state council of parent education. This organization seems essential to the development and coordination of parent education through the various agencies in the State.

Clothing

"Clothing the Family" problems increase in complexity each year. Three of the factors determining the content of the program are; the prevalence of low incomes in the groups interested in the program; difficulties attendant on knowing how and what to buy; and planning and achieving adequate wardrobes at the lowest possible cost of money and effort. A fourth factor influencing this program is the fact that the enrolment includes more young women than ever before. An appreciable percentage of these grew up during a period when neither home nor school prepared them to meet family clothing problems. A check on 3,298 of those enrolled in groups this year showed that 20.3 per cent were under 30 years of age, 58.4 per cent were under 40 years of age.

Much time of the specialist was devoted to buying problems. The rest of the time was devoted to construction of children's coats, hats, mittens, play suits, and cotton, silk and wool dresses. Most of these garments for children were made from old material and mill ends. Care, repair, and use of sewing machines were also featured. Various commercial agencies and the department of engineering cooperated in carrying out this program. Relief agencies, especially clothing centers, have used illustrative material prepared by the clothing specialist.

Family Finance

Family finance programs have been carried in every county of the state for the first time since this work was started three years ago. During the past year, the women have been especially interested in consumer problems of buying household materials.

Home Furnishings

Attractive, convenient, and comfortable homes play a very important part in family and community life. Because of this fact, special emphasis has been put upon making the most of what a family has in the way of furnishings. Many families have renovated furniture, re-seated chairs, and re-finished floors and walls of their homes. The program started last year on appreciation of beauty in the home has enlisted the interest of many homemakers. Through fair exhibits and printed bulletins, assistance has been given to large groups in the state. Tours to museums, attractively furnished homes, and art exhibits have been included in the program.

Home Management

The major problems receiving attention in the managerial phases of homemaking were as follows: buying of large and small equipment—non-electrical and electrical—home repairs and remodeling, work centers in homes and community buildings—especially in kitchens—and planning the homemaker's time.

Many home visits have been made in order to get first-hand information regarding these four problems to use as a basis for the home management program. Assistance on specific problems is always given at the time of the home visit. In some sections of the state, surveys have been made by the Rural Electrification Administration and help on outlets, lighting, and electrical equipment has been included in the home management program. The men and boys in the families are interested in many phases of the work.

In one county 22 organizations have been interested in making kitchens more convenient and more attractive. Seventy-nine men and women, including Grange members, church leaders, selectmen, E. R. A. administrators, town directors, Parent-Teacher Associations, and Women's Club officers, have met with the extension agents to look over their kitchens and to plan changes that would make them a credit to the community. Some of the kitchens only need a few improvements, others more, but in every case many helpful suggestions were made.

Nutrition

With the increase in price of some foods, interest in buying has continued to grow among our homemakers. Buying food from the point of view of good nutrition has been the main pivot of emphasis in the nutrition project. Projects in better community meals and home care of the sick and convalescent have been carried in several counties.

Interest in the school lunch has been stimulated and renewed, partly because of a cooperative study through the state departments of Education and Public Health, Federated Women's Clubs, Parent-Teacher Associations, and the Extension Service. A cooperative effort is being made with the W. P. A. to serve a hot dish to supplement the lunches brought from home.

A special effort has been made to cooperate with the Western Massachusetts Health Association, the W. P. A. supervisors for Western Massachusetts, and the home service directors for the electric companies in the state.

Recreation

Four county-wide summer music festivals climaxed by a regional festival at Farm and Home Week launched a new program in music which is continually expanding.

The second annual play-writing contest doubled the number of entries with noticeable improvement in the quality of plays submitted. Response to the round-table conference on play-writing indicated that it met a real interest and need. The Play Production project has met a popular demand and has been carried on for representatives of a wide variety of organizations in five counties.

The large attendance at the conference on community planning for recreation showed an increasing interest in this important field. Progress has been reported by some communities in the development of community calendars, the coordination of existing agencies and organizations, and expansion of recreation facilities and program in the community.

Recreation Program Planning, with suggestions for informal activities for social recreation, received a ready response in four counties. One county is experimenting with a series of meetings on the leader-training basis, including many phases of home and community recreation. Another received the Training for Leadership course with surprising enthusiasm by women in various positions of leadership in each town of the county. Thus, some phase of the recreation program has reached eleven counties of the state.

4-H Club Work

The regular projects were carried during 1935 with an enrollment of 19,321 and 81 per cent finishing all requirements. Trips, fairs, and local and inter-state contests features the boys' work. One interesting phase of the girls' work was their interest in enrolling in more than one home economics project, thus getting a well rounded home economics training. Several special features were developed and organized to arouse the interst of as many club members as possible.

For several years we have endeavored to stimulate interest in music appreciation via the radio. This included the special 4-H programs by the United States Marine Band and a local music identification contest conducted with the cooperation of Station WBZ. The Massachusetts winner of this contest received a trip to the State 4-H Camp. To further arouse interest in music appreciation, eleven songs, chosen from a list of "Songs That Live", were learned by the members of the State Camp. Each county was then asked to select one of these songs for dramatization, and on the last evening a pageant was presented.

A second special feature was a piece of work carried on in cooperation with the State Department of Public Health and 600 dentists throughout the state under the slogan, "Protect Your Smile". The 4-H club members were asked to do three things; give attention to their diet as affecting teeth, clean their teeth regularly, and visit their dentist at least once a year for examination. In some cases every member of a club completed the program 100 per cent and many club members reported having visited dentists. The interest in this work has been so keen and the cooperating agencies so willing to assist that the program will be continued.

The third special feature has come to be known as 4-H Conservation work. To arouse interest in this work two camps were established: one on Mt. Toby reservation where 31 boys over sixteen years of age camped under tents and studied forestry and wild life. The other camp was held at the State College where 33 girls studied nature as it is found in any Massachusetts environment. Most of these young people, having received instruction in these camps, have gone to their homes and organized clubs to be known as 4-H Conservation clubs, or introduced features of conservation work to their regular clubs.

In 1916 the only camp conducted by the 4-H club organization was one of a week's duration for girls held at the State College. In 1935 there were eight county camps and four camps at the State College. The camps held at the college included the girls' and boys' conservation camps, a camp for local leaders 21 years of age and older, and the state camp for junior leaders and prospective leaders, or those ranging in age from 16 to 21.

A week-end gathering of former State camp members was held for the first time and it was so helpful to those present that a committee was appointed to work out a program for another year.

Any organization that can produce its own leadership may well be established on a firm foundation. Of the 1,706 local leaders in 1935, there were more than 25 per cent who were former club members. Much attention is being given to training local leaders in subject matter. The number of local leaders' meetings has increased during the past six years from 77 to 406. An effort is being made to get each club to appoint not only a leader, but also an assistant leader so that at least one will be able to attend leaders' meetings and receive the instruction and information given.

For some time it has been felt that an effort should be made to increase the number of older club members from 16 to 21 years of age. Last year a special drive was made with this end in view. The statistics show an increase from 1,048 in 1930 to 1,899 in 1935.

Several experiments have been made as to the best organization for the State camp. For the past four years the minimum age limit has been set at 16 and the program developed to give instruction in leadership, in the hope that many of those in attendance would become leaders on their return home. This year the camp lasted 10 days and consisted of 150 members, the largest number ever enrolled. A special feature of the program was the dividing of the group into five units, each with a chairman and secretary, to discuss the topic—"How to Obtain and Give Happiness". As a result of this program, several clubs have organized discussion groups.

There has been an increased interest among the Service Clubs which are organized in every county and the two Alumni Clubs. Among the activities of the members we have: acting as local leaders, earning money to send deserving club members to the camps and on special trips, acting as counselors in county camps, providing funds to buy second and third year pins, packing Thanksgiving and Christmas baskets, and rolling bandages for hospitals.

The 4-H radio program was continued throughout the year and presented over WBZ and WBZA. The broadcasts consisted of music, 4-H items of interest, and dramatics. The club member and local leader who wrote the best plays which were presented over the radio were each given a trip to the State camp.

General

The informational news service has been continued to a selected list of daily, weekly, and farm papers (approximately 125) which have manifested their interest in the material. Two releases (one agricultural and one home economics)a page of filler facts, and a weekly feature known as the Back Yard Gardener are sent each week, with additional articles and news items being issued as the need arises. Forty-five releases were sent during the month of November and a limited clip service shows 1,600 inches of it used in 48 papers.

During the year 16 extension leaflets were revised and six new ones were printed, these being used to supplement the teaching of specialists. News writing schools, circular letters, personal visits, and other methods have been used to stimulate the interest of county and State workers in better informational service.

The house organs, known as The Gleam for 4-H leaders, Featheredfax for commercial poultrymen, Field Station Journal for vegetable growers, Farm Economic Facts for farmers, and Program Hints for those responsible for educational programs within their respective community organizations, were issued regularly.

Our staff continues to make good use of the radio. Three programs a week, 10 minutes each, are presented over WBZ. Frequently additional periods are used. For example, a monthly broadcast on the agricultural situation is made by members of the economics department. Middlesex county presents 10 minutes every other week on WBZ. From May through September one home demonstration and one agricultural agent gave a talk over WBZ once a week. Forty-three broadcasts were presented in cooperation with Station WGY in Schenectady. The syndicated agricultural program, known as Farm and Garden Chats, was continued for 15 minutes a day until October 1, at which time it was changed to three times a week and the contents changed to meet consumer as well as agricultural interests. At the present time five stations carry this material regularly.

In addition the following county programs are presented: 15 minutes daily by the Worcester agricultural staff over WTAG, 15 minutes weekly divided between the home and club departments over WTAG, 15 minutes weekly by the Middlesex staff over WLLH, 15 minutes weekly by the Hampden agents over WMAS, and 15 minutes weekly by the Bristol agricultural agent over WNBH. During the year the specialists gave a total of 331 radio talks and the county staff 503. Over 700 requests for bulletins and other material were received at the mailing room during November, as a result of our broadcasts. This does not include the requests received at the county offices.

The attendance at the 17th Annual Farm and Home Week was one of the largest on record. This annual event offers an excellent opportunity for those interested to hear the problems of the farm and home discussed by some of the best authorities available. Members of the staff assisted at the fall fairs in judging, giving demonstrations, and supervising camps and departments. Small unit exhibits, featuring some one practice, were prepared at the college and shown by the counties at 19 fairs.

The cooperation of the members of the college staff, both resident instruction and experiment station, has been most helpful in carrying on some of the extra demands of the Extension Service during the past year.

Willard A. Munson,
Director.

REPORT OF THE TREASURER

The financial accounts of the College are divided into three major sections: first, State appropriation; second, Federal appropriation; and third, Trust Funds.

The State appropriation is divided into Maintenance and major building projects. The 1935 Legislature appropriated to the College for maintenance the sum of $999,545.00. There was carried forward from the previous year a balance of $24,350.29, making a total available of $1,023,895.29. Our expenditures amounted to $1,014,655.05. Outstanding obligations including our fuel account amounted to $9,227.53, which leaves a balance of $12.71 reverting to the State.

The major building appropriations made by the State Legislature amounted to $57,610.00 and there was also an increase from Federal PWA of $19,000 for Renovation of Steam and Electrical Lines, and an additional $1,000 for the Men's Dormitory. There was a balance of $340,368.94 brought forward from the previous year's grants by the Public Works Administration, and $11,172.40 from the State appropriation, making a total of $429,151.34. There was expended on construction $350,924.14. The balance reverting to the State on account of finished projects amounted to $61.30, leaving a balance of $78,165.90 brought forward for 1936 construction.

Financial statement verified. February 28, 1936.—J. D. M.
Approved.

GEO. E. MURPHY,
Comptroller.

Federal appropriations are based on a fiscal year ending June 30, the following year. The balance on hand December 1, 1934, was $58,744.43 and the appropriations received were $269,683.30, of which $46,362.34 was on account of the new Bankhead-Jones appropriation, making a total available of $328,427.73. There was expended during the year $234,178.82, leaving a balance of $94,248.91.

Trust funds are made up of Dining Hall, Athletics, Academic Activities, Endowment, Student, and other miscellaneous accounts. The balance on hand December 1, 1934 was $68,098.36; the receipts during the year were $282,913.73; expenditures, $283,128.04, leaving a balance of $67,884.05.

A summary of the Institution's receipts and disbursements follows:

Dec. 1, 1934	Balance	$502,734.42	
Nov. 30, 1935	Available funds	1,629,752.03	
			$2,132,486.45
Nov. 30, 1935	Expenditures	$1,882,886.05	
Nov. 30, 1935	Reverted to Commonwealth	61.30	
			1,882,947.35
Nov. 30, 1935	Balance unexpended		$249,539.10
	This unexpended balance is divided as follows:		
	College	$9,240.24	
	Specials	78,165.90	
	Federal	94,248.91	
	Trust funds and student deposits	67,884.05	
		$249,539.10	

The receipts of the Institution for the year which were paid to the State Treasurer amounted to $290,043.10. This is an increase of $12,364.36 over 1934. The inventory of the Institution shows a value of $3,611,532.09.

The income from our Endowment Funds amounted to $7,122.31. In addition to New York Central stock, State and Washington Building, Prudence Bonds Corporation and Prudence Company, the Brown Company has defaulted for six months income. We received $140.00 interest from Prudence Company, $1,750 on principal, $2,500.00 of Community Public Service Company bonds and $2,500.00 stock for Texas-Louisiana Power. Two series of our investment bonds were called.

The Monongahela West Penn 5½ at 105 which we immediately invested in 4½'s at par. The Power Co. of New York bonds were called at 104 and we invested in Federal Land Bank of Berkeley, at 103½. We received $70.79 from the Class of 1871 which was added to D. K. Bangs Fund, and $4,500.00 from Betsy Pinkerton Estate. The total amount of invested funds at the par value is $150,534.10, and the market value December 1, 1935, was $133,198.10. The $4,500.00 was not invested until January, 1936. From our Trust Funds, there was 90 loans made to students during the year, aggregating $5,439.55 and 129 scholarships granted, aggregating $3,600.00.

An examination of the accounts of the Institution for the year ending November 30, 1934, was made under the direction of the State Auditor.

A complete detail of all receipts and expenditures follows:

FRED C. KENNEY,
Treasurer.

SUMMARY OF FINANCIAL REPORT FOR 1935

Current Maintenance Account

I.	State Funds:	
	a. Appropriation for 1935	$999,545.00
	b. Expended to November 30	990,304.76
	c. Outstanding liabilities for which funds are reserved	9,227.53
	d. Balance reverting to State Treasury	$12.71
II.	Federal Funds:	
	a. Appropriation for 1935	$269,683.30
	b. Expended to November 30	234,178.82
	c. Balance	$35,504.48
III.	Trust Funds:	
	a. Receipts	$282,913.73
	b. Expenditures	283,128.04
	c. Excess of expenditures over receipts	$214.31

This excess of expenditures over receipts has resulted in a reduction in the balance in these funds from $68,098.36 in 1934 to $67,884.05 in 1935.

Summary of Maintenance Account

I.	Balances on hand Dec. 1, 1934	*$151,193.08
	Receipts for year	1,552,142.03
	Total	$1,703,335.11
II.	Expenditures to Nov. 30, 1935	*$1,531,961.91
	Balance Nov. 30, 1935	$171,373.20
III.	Distribution of Balance:	
	1. 1935 State Fund Liabilities	$9,227.53
	2. State Funds reverting to State Treasury	12.71
	3. Federal Funds	94,248.91
	4. Trust Funds	67,884.65
		$171,373.20

*These sums include an item of $24,350.29 brought forward from 1934 appropriation to meet 1934 obligations paid in 1935.

Capital Improvements Account

A. Receipts:		
I. Appropriations under P.W.A.		
a. Renovation of steam lines (Balance)		$74,820.11
b. Men's Dormitory (Balance)		112,741.07
c. Library (Balance)		172,807.76
II. Special State appropriations		57,610.00
III. Balance from special State appropriations of 1933 and 1934		11,172.40
Total		$429,151.34
B. Expenditures:		
I. For construction		$350,924.14
II. Unexpended balance of 1933 and 1935 finished projects returned to State Treasury		61.30
Total		$350,985.44
C. Balance brought forward for 1936 construction		78,165.90
		$429,151.34

Consolidated Statement of Federal and State Credits and Payments

1934		Debit	Credit
Dec. 1	To balance on hand	$58,744.43	
1935			
Nov. 30	To departmental income	290,043.10	
Nov. 30	To receipts from State Treasurer	814,561.32	
Nov. 30	To receipts from United States Treasurer	262,951.64	
Nov. 30	To bills paid by State Treasurer	558,671.91	
Nov. 30	Refunds transferred to State Treasurer		$922.38
Nov. 30	Expenditures for fiscal year		1,599,758.01
Nov. 30	Income transferred to State Treasurer		290,043.10
Nov. 30	Balance on hand		94,248.91
		$1,984,972.40	$1,984,972.40

Statement of Legislative Apportionment and Expenditures for Fiscal Year Ending November 30, 1935.

	Apportionment for last fiscal year	Expenditures		
College:				
Personal Service	$493,225.00		$499,631.41	
Maintenance	182,798.39		175,252.20	
		$676,023.39		$674,883.61
Replacements	6,739.89	6,739.89	5,575.40	5,575.40
Experiment Station:				
Personal Service	92,640.00		90,632.28	
Maintenance	16,636.51		20,562.90	
		109,276.51		111,195.18
Extension Service:				
Personal Service	65,640.00		64,020.67	
Maintenance	32,078.75		30,790.58	
		97,718.75		94,811.25
Short Courses:				
Personal Service	50,870.00		49,345.58	
Maintenance	8,697.43		7,968.10	
		59,567.43		57,313.68
Waltham Field Station:				
Personal Service	4,900.00		6,896.30	
Maintenance	6,376.69		5,164.41	
		11,276.69		12,060.71
Trustees Travel	1,200.00		634.84	
Printing Reports	2,052.90		1,077.67	
		3,252.90		1,712.51

Feed Law	12,680.50		11,411.03	
Fertilizer Law	15,703.50		15,032.81	
Dairy Law	1,054.77		741.10	
Poultry Disease Law	23,200.00		23,697.95	
Seed Control Law	7,102.41		6,219.82	
		59,741.18		57,102.71
Unapportioned	298.55	298.55		
Totals		$1,023,895.29		$1,014,655.05
Balance unexpended				9,240.24
				$1,023,895.29

Detail Statement of Federal and State Credits

	Other Funds	State Funds	Totals
Balance, December 1, 1934	$58,744.43	–	$58,744.43
College receipts from students and others	–	–	146,615.02
Tuition	–	110,944.00	–
Room Rent and House Rent	–	32,825.59	–
Other charges to students	–	2,845.43	–
Department sales	–	–	54,931.67
Products	–	48,593.27	–
Miscellaneous	–	6,338.40	–
Experiment Station	–	–	3,997.80
Miscellaneous	–	46.38	–
Cranberry	–	2,700.83	–
Station Service	–	1,250.59	–
Extension Service	–	–	230.33
Correspondence	–	201.50	–
Miscellaneous	–	28.83	–
Short Courses	–	–	23,358.50
Student fees	–	22,416.50	–
Winter School	–	942.00	–
Waltham Field Station	–	–	331.12
Produce	–	331.12	–
Feed Law	–	21,437.80	21,437.80
Fertilizer Law	–	14,431.73	14,431.73
Dairy Law	–	1,241.60	1,241.60
Poultry Disease Law	–	22,477.88	22,477.88
Seed Control Law	–	75.60	75.60
Bacteriology Service	–	728.05	728.05
Pathology Service	–	186.00	186.00
Treasurer of the Commonwealth	–	–	814,561.32
Maintenance	–	793,326.20	
Special Appropriation	–	14,503.46	
Endowment	4,601.66	–	–
Smith Hughes Fund	2,130.00	–	–
Federal Government*	–	–	262,951.64
College	60,633.34	–	–
Experiment Station	92,227.32	–	–
Extension Service	110,090.98	–	–
Bills paid by State Treasurer	–	558,671.91	558,671.91
	$328,427.73	$1,656,544.67	$1,984,972.40

Federal*			
Adams Fund of 1906	$15,000.00	–	–
Additional Federal Co-operative of 1930	8,000.00	–	–
Bankhead Jones, 1935	46,362.34	–	–
Capper Ketchum of 1928	23,869.86	–	–
Federal Smith Lever of 1914	54,086.10	–	–
Hatch Fund of 1887	15,000.00	–	–
Land Grant of 1862	7,300.00	–	–
Morrill Fund of 1890	16,666.67	–	–
Nelson Fund of 1907	16,666.67	–	–
Purnell Fund of 1925	60,000.00	–	–
	$262,951.64	–	–

Detail Statement of Federal and State Payments

	Other Funds	State Funds	Totals
College Expenses	–	–	
Personal Service	$50,122.97	$499,631.41	$737,248.64
Maintenance	–	175,252.20	–
Replacements	–	5,575.40	–
Return to State Treasurer	6,666.66	–	–
Experiment Station	–	–	196,393.56
Personal Service	80,368.07	90,632.28	–
Maintenance	4,830.31	20,562.90	–
Extension Service	–	–	187,002.06
Personal Service	87,551.05	64,020.67	–
Maintenance	4,639.76	30,790.58	–

Short Courses	–	–	57,313.68
Personal Service	–	49,345.58	–
Maintenance	–	7,968.10	–
Waltham Field Station	–	–	12,060.71
Personal Service	–	6,896.30	–
Maintenance	–	5,164.41	–
Trustees Travel	–	634.84	634.84
Printing Reports	–	1,077.67	1,077.67
Feed Law	–	11,411.03	11,411.03
Fertilizer Law	–	15,032.81	15,032.81
Dairy Law	–	741.10	741.10
Poultry Disease Law	–	23,697.95	23,697.95
Seed Control Law	–	6,219.82	6,219.82
Special Appropriations	–	–	350,924.14
1933 Renewal Steam Line	–	504.03	–
P.W.A. Renovation Steam and Elec. Line	–	72,780.19	–
P.W.A. Men's Dormitory	–	110,655.74	–
P.W.A. Library	–	129,127.79	–
1934 Hospital Ward	–	14,174.44	–
1935 Aid to Certain Students	–	5,000.00	–
1935 Emergency Needs	–	2,391.78	–
1935 Grading Female Students Athletic Field	–	2,998.47	–
1935 Initiating Nursery Industry	–	3,438.48	–
1935 Laying New Water Main	–	4,190.99	–
1935 Reconstruction Drill Hall Floor	–	2,561.05	–
1935 Dutch Elm Disease	–	2,886.63	–
1935 Reconstruction of Coal Hoist	–	43.30	–
1935 Construction of Highway	–	171.25	–
Income	–	290,043.10	290,043.10
Refunds to State Treasurer	–	922.38	922.38
Balance on hand	94,248.91	–	94,248.91
	$328,427.73	$1,656,544.67	$1,984,972.40

Budget of State Appropriation for Current Expenses for Year Ending November 30, 1935

	Appropriation	Expenditures	Balances
Personal Services:			
Administration	$50,532.50	$50,751.06	–$218.56
Instruction	260,610.00	261,746.53	–1,136.53
Short Courses	50,870.00	49,345.58	1,524.42
Extension Service	65,640.00	64,020.67	1,619.33
Experiment Station	92,640.00	90,632.28	2,007.72
Control Service:			
Fertilizer Law	12,455.00	11,661.89	793.11
Poultry Disease Law	18,150.00	19,144.53	–994.53
Milk Testing Insp. Law	600.00	495.00	105.00
Commercial Feedstuffs	10,595.00	9,518.13	1,076.87
Seed Law	5,355.00	4,151.83	1,203.17
Waltham Field Station	4,900.00	6,896.30	–1,996.30
Departmental Maintenance	48,420.00	39,525.76	8,894.24
Farm Maintenance	29,335.00	33,816.43	–4,481.43
Operating Maintenance	82,067.50	88,686.92	–6,619.42
Repairs, Ordinary	22,260.00	25,104.71	–2,844.71
Total Personal Service	$754,430.00	$755,497.62	–$1,067.62
Travel	4,016.67	5,177.79	–1,161.12
Supplies and Equipment	92,648.97	91,363.86	1,285.11
Short Courses:			
Travel	1,100.00	795.57	304.43
Supplies and Equipment	7,597.43	7,172.53	424.90
Extension Service:			
Travel	17,500.00	16,555.94	944.06
Supplies and Equipment	14,578.75	14,234.64	344.11
Experiment Station:			
Travel	2,000.00	2,023.86	–23.86
Supplies and Equipment	14,636.51	18,539.04	–3,902.53
Fertilizer Control Law:			
Travel	800.00	781.00	19.00
Supplies and Equipment	2,448.50	2,589.92	–141.42
Poultry Disease Law:			
Travel	1,500.00	1,674.65	–174.65
Supplies and Equipment	3,550.00	2,878.77	671.23
Milk Testing Insp. Law:			
Travel	350.00	185.37	164.63
Supplies and Equipment	104.77	60.73	44.04
Commercial Feedstuffs:			
Travel	700.00	299.67	400.33
Supplies and Equipment	1,385.50	1,593.23	–207.73
Seed Law:			
Travel	–	–	–
Supplies and Equipment	1,747.41	2,067.99	–320.58
Waltham Field Station	6,376.69	5,164.41	1,212.28
Heat, Light and Power	70,409.20	61,299.65	9,109.55
Farm	1,723.55	2,092.08	–368.53
Repairs Ordinary	14,000.00	15,318.82	–1,318.82
Replacements	6,739.89	5,575.40	1,164.49
Trustees Expenses	1,200.00	634.84	565.16
Printing Reports	2,052.90	1,077.67	975.23
Unapportioned Liabilities	298.55	–	298.55
Sub Total	269,465.29	259,157.43	10,307.86
Total Maintenance Appropriation	$1,023,895.29	$1,014,655.05	$9,240.24

Summary of Institution Inventory

Land	$178,815.54
College Buildings	2,250,439.30
College Equipment	952,716.47
Experiment Station Buildings	89,741.08
Experiment Station Equipment	139,819.70
Total	$3,611,532.09

MASSACHUSETTS STATE COLLEGE

Dining Hall Statement—November 30, 1935

Balance Dec. 1, 1934			$3,586.53
Disbursements Dec. 1, 1934–Dec. 1, 1935:			
Salary and Labor	$30,984.56		
Provisions	52,302.96		
Rent	3,000.00		
Refunds	1,063.93		
Laundry and Fuel	2,773.48		
Equipment	962.09		
China, Glass, Linen and Equipment, Repairs, etc.	598.13		
Miscellaneous	1,795.89		
		$93,481.04	
Outstanding bills Nov. 30, 1935		2,847.54	
Outstanding accounts Nov. 30, 1935:			
Board			$893.70
Special Service			136.03
Inventory Nov. 30, 1935			4,241.70
Total Collections Dec. 1, 1934–Dec. 1, 1935			92,811.54
Balance		5,340.92	
		$101,669.50	$101,669.50

MASSACHUSETTS STATE COLLEGE
Consolidated Endowment Funds

Name and Description of Funds	Operation of Fund for the Year Ending Nov. 30, 1935			Balance to Credit of Fund Nov. 30, 1935	
				Income	*Principal*
Alvord Dairy Scholarship—Gift of Henry E. Alvord (1914). Income used for graduate work in Dairy Industry.	*Receipts*				
	Balance Dec. 1, 1934	$185.75			
	Income from Investment	210.00			
			$395.75		
	Balance Nov. 30, 1935			$395.75	$4,000.00
D. K. Bangs Fund — Gift of Louisa A. Baker (1909). Income used as a loan fund. Class 1871 gift added to this fund.	*Receipts*				
	Cash Balance Dec. 1, 1934	3,649.07			
	Loans outstanding Dec. 1, 1934	5,046.42			
			8,695.49		
	Income from investment	300.00			
	Income from interest on loans	154.46			
			454.46		
	Total		9,149.95		
	Loans outstanding Nov. 30, 1935	4,307.54			
	Cash balance Nov. 30,1935	4,842.41			
				9,149.95	7,070.79
George H. Barber — Gift of Geo. H. Barber (1927). Income to be used for encouragement of general athletics.	*Receipts*				
	Balance Dec. 1, 1934	303.00			
	Income from investment	250.00			
			553.00		
	Balance Nov. 30, 1935			553.00	5,000.00

Name and Description of Funds	Operation of Fund for the Year Ending Nov. 30, 1935			Balance to Credit of Fund Nov. 30, 1935	
				Income	*Principal*
Burnham Emergency — Gift of T. O. H. P. Burnham of Boston (1893). Income to be used in cases of emergency without restrictions.	*Receipts*				
	Balance Dec. 1, 1934		132.20		
	Unearned premium	2.50			
	Income from investment	353.28	355.78		
	Total		487.98		
	Payments				
	Expended under order of President		265.22		
	Balance Nov. 30, 1935			222.76	7,557.49
F. G. Crane Fund — Gift of F. G. Crane of Dalton (1924). Income used for scholarships, preference being given to residents of Berkshire County.	*Receipts*				
	Balance Dec. 1, 1934		1,227.14		
	Income from investment	1,477.51			
	Income from unearned premium	202.50	1,680.01		
	Total		2,907.15		
	Payments				
	Expended for scholarships	1,320.00			
	Expense in buying bond	58.74	1,378.74		
	Balance Nov. 30, 1935			1,528.41	25,250.00
John C. Cutter — Gift of Dr. John C. Cutter of Worcester, Mass. (1909). Income to be used for purchase of books on Hygiene.	*Receipts*				
	Balance Dec. 1, 1934	39.87			
	Income from investment	50.00	89.87		
	Payments				
	Expended for books on Hygiene		89.87		
	Balance Nov. 30, 1935				1,000.00
Endowed Labor Fund — Gift of a friend of the College. (1901). Income to be used for student labor.	*Receipts*				
	Balance Dec. 1, 1934	999.56			
	Income from investment	326.25	1,325.81		
	Payments				
	Expended student labor		884.24		
	Balance Nov. 30, 1935			441.57	9,000.00
J. D. W. French Fund — Gift of the Bay State Agricultural Society (1923). Income to be used to defray expenses of judging team to National Dairy and Livestock shows, also scholarships, loans and prizes in Dairying and Forestry.	*Receipts*				
	Balance Dec. 1, 1934	1,082.54			
	Income from investment	550.00	1,632.54		
	Payments				
	Expended for student judging trip	164.13			
	Expended for scholarships	255.00			
	Expended for speakers—Animal Husbandry	47.00	466.13		
	Balance Nov. 30, 1935			1,166.41	10,000.00
Gassett Scholarship — Gift of Henry Gassett of Boston, Mass. (1888). Income used for scholarships.	*Receipts*				
	Balance Dec. 1, 1934	112.72			
	Income from investment	31.25	143.97		
	Payments				
	Expense in mailing bonds		.09		
	Balance Nov. 30, 1935			143.88	1,500.00
Chas. A. Gleason Fund — Gift of Chas. A. Gleason of North Brookfield (1926). Income used for scholarships.	*Receipts*				
	Cash balance Dec. 1, 1934	1,200.69			
	Loans outstanding Dec. 1, 1934	810.20	2,010.89		
	Income from investment	100.00			
	Income from interest on loans	8.80	108.80		
	Total		2,119.69		
	Payments				
	Expended for scholarships	1,020.00			
	Expense in mailing bonds	.89	1,020.89		
	Loans outstanding Nov. 30	538.00			5,000.00
	Cash balance Nov. 30,1935	560.80		1,098.80	
Grinnell Prize Fund — Gift of Hon. Wm. Claflin (1874). Income to be used as a prize fund and given to the two members of the graduating class who pass the best examination in theory and practice of agriculture.	*Receipts*				
	Balance Dec. 1, 1934		397.28		
	Payments				
	Expended for prizes		50.00		
	Balance Nov. 30, 1935			347.28	1,000.00
Clarence C. Hardy Scholarship Fund — Gift of Clarence C. Hardy of Groveland,					

Name and Description of Funds	Operation of Fund for the Year Ending Nov. 30, 1934			Balance to Credit of Fund Nov. 30, 1934	
				Income	*Principal*
Mass. (1934). Income to be used to provide scholarships for needy and worthy young men and women, preference given to graduates of Groveland High School. This amount to be increased by further payments out of a closed bank, if as and when paid.	*Receipts*				65.99
Hills Fund — Gift of Leonard M. and Henry Hills of Amherst (1867). Income to be used to establish and maina botanic garden.	*Receipts*				
Botany $373.17	Balance Dec. 1, 1934		154.08		
Hort. 376.61	Unearned premium	50.00			
	Income from investment	623.43	673.43		
	Total		827.51		
	Payments				
	Expended for Botany and Hort. Dept.	749.78			
	Expense connection buying bonds	7.79			
	Expended mailing bonds	.27	757.84		
	Balance Nov. 30, 1935			69.67	16,114.75
Library Fund — 1883–94. This fund raised by Alumni and other friends of the college. Income is used to purchase books for library.	*Receipts*				
	Balance Dec. 1, 1934	-9.73			
	Income from investment	366.98	357.25		
	Payments				
	Expended for books for library		300.17		
	Balance Nov. 30, 1935			53.08	10,375.52
M. S. C. Investment (1893). Investment made by vote of Trustees in 1893. Income of this fund is allowed to accumulate.	*Receipts*				
	Balance Dec. 1, 1934	143.26			
	Income from investment	1.62	144.88		
	Balance Nov. 30, 1935			144.88	550.00
Porter L. Newton Fund — Gift of Porter L. Newton of Waltham, Mass. (1926). Income to be used for scholarships.	*Receipts*				
	Balance Dec. 1, 1934	541.24			
	Income from investment	1,033.46	1,574.70		
	Payments				
	Expended for scholarships		855.00		
	Balance Nov. 30, 1935			719.70	23,411.33
Robt. F. Pomeroy Library Fund — Gift of Ellen Pomeroy Moore (1928). Income to be used to purchase books on Horticulture and Landscape Architecture section of the Library.	*Receipts*				
	Balance Dec. 1, 1934	33.86			
	Income from Investment	75.00	108.86		
	Payments				
	Expended for books on Hort. and Lands. Arch.		60.33		
	Balance Nov. 30, 1935			48.53	1,500.00
Alan Leon Pond Memorial (1920). Given by friends of the College to establish a fund, income of which to be used for the promotion of athletics.	*Receipts*				
	Balance Dec. 1, 1934	10.34			
	Income from investment	13.02	23.36		
	Payments				
	Expended for medal		23.14		
	Balance Nov. 30, 1935			.22	744.78
Mary Robinson Fu. d — G ft of Mary Robinson of Medford (1874). Income used for scholarships.	*Receipts*				
	Balance Dec. 1, 1934	115.51			
	Income from investment	25.18	140.69		
	Balance Nov. 30, 1935			140.69	1,000.00
William R. Sessions Fund — Gift of Clara Markham Sessions (1918). Income used for the use of the College as the Trustees may direct.	*Receipts*				
	Balance Dec. 1, 1934		83.83		
	Previous year refund	75.00			
	Income from investment	230.00	305.00		
			388.83		
	Payments				
	Expended under order of President		277.92		
	Balance Nov. 30, 1935			110.91	5,000.00
Betty Steinbugler Fund — Gift of John L. Steinbugler (1930) as a prize for best essay in English written by a junior or senior girl.	*Receipts*				
	Balance Dec. 1, 1934	.27			
	Income from investment	13.82	14.09		
	Payments				
	Expended for Prize		10.00		
	Balance Nov. 30, 1935			4.09	200.00

Name and Description of Funds	Operation of Fund for the Year Ending Nov. 30, 1935			Balance to Credit of Fund Nov. 30, 1935	
William Wheeler Fund — Gift of William Wheeler of Concord, Mass. (1933). Income to be used for the best interest of the College in the judgment of the Trustees.	*Receipts*				
	Balance Dec. 1, 1934	294.46			
	Income from investment	312.50			
			606.96		
	Payments				
	Expended under order of President		337.50		
	Balance Nov. 30, 1935			269.46	10,000.00
Whiting Street Scholarship Fund — Gift of Whiting Street of Northampton, Mass. (1899). Income used for scholarships.	*Receipts*				
	Balance Dec. 1, 1934	156.75			
	Income from investment	33.75			
			190.50		
	Balance Nov. 30, 1935			190.50	2,000.00
Helen A. Whittier Scholarship Fund — Given by Massachusetts State Federation of Women's Clubs (1929). Income used for scholarships in Art as applied to living.	*Receipts*				
	Balance Dec. 1, 1934	25.66			
	Income from investment	171.31			
			196.97		
	Payments				
	Expended for scholarships		150.00		
	Balance Nov. 30, 1935			46.97	3,195.45
Betsey C. Pinkerton Fund — Gift of Betsey C. Pinkerton of Worcester, Mass. Income to be used for scholarships for two students of the schools of Worcester.					4,500.00
				$16,846.51	$155,034.11

Trust Account

Student Loan Fund

		Distribution	
		Notes	Cash
Original gift	$500.00	–	–
Interest earned	135.28	–	–
	$635.28	$375.00	$260.28

4-H Club for Boys

Original gift	$1,000.00		
Interest earned	126.80	–	–
	$1,126.80	$325.00	$801.80

4-H Club for Girls

Original gift	$100.00	–	–
Additional gift	35.00	–	–
Interest earned	16.45	–	–
	$151.45	$55.00	$96.45

Vincent Goldthwait Loan

Original gift	$5,175.00	–	–
Additional gift	275.00	–	–
Interest earned	115.36	–	–
	$5,565.36	$3,382.25	$2,183.11
		$4,137.25	$3,341.64
Total Trust Fund Account		$7,478.89	

STATISTICS

Table I.—New Appointments

A. Administrative Departments

Senior Clerk, Treasurer's Office: H. Avery Barrett.
Junior Clerk and Stenographer, President's Office: Ethel A. Holt.
Junior Clerk and Stenographer, Treasurer's Office: Dorothy E. Mallory.
Junior Clerk and Stenographer, Dean's Office: Martha Morse, A.B., Smith, 1934.
Junior Clerk and Stenographer, Placement Service: Ellen F. Whipple.
Junior Clerk and Stenographer, Field Agent's Office: Jessie I. Woodbury.
Dormitory Matron: Mrs. Mary L. Broughton.

B. Academic Departments

Assistant Professor of History and Sociology: Theodore C. Caldwell, A.B., College of Wooster, 1925; M.A., Harvard, 1926; Ph.D., Yale, 1934.
Assistant Professor of Home Economics: Mrs. Sara M. Coolidge, A.B., Michigan State College, 1924; M.S., 1927.
Instructor in Forestry: James D. Curtis, B.A., University of British Columbia, 1929; M.F., Harvard, 1935.
Junior Clerk and Stenographer, Physical Education Division: Margaret A. Fuller.
Assistant Professor of Economics: Philip L. Gamble, B.S., Wesleyan, 1928; M.A., 1929; Ph.D., Cornell, 1935.
Instructor in Agronomy: Benjamin Isgur, B.S., Massachusetts State College, 1933; M.S., 1935.
Instructor in Physical Education: Sidney W. Kauffman, B.S., Springfield College, 1931; M.Ed., 1934.
Assistant Professor of Mathematics: Walter M. Miller, Ph.B., Lafayette, 1918; M.A., Pennsylvania State College, 1923; Ph.D., University of Illinois, 1927.
Junior Clerk and Stenographer, Department of Economics: Elizabeth L. Moody, B.A., Rollins College, 1933.
Instructor in Education: Claude C. Neet, A.B., University of Southern California, 1930, M.A., Clark University, 1932; Ph.D., 1935.
Instructor in Entomology and Beekeeping: Frank R. Shaw, B.S., Massachusetts State College, 1931.

C. Extension Service

Assistant Extension Specialist in Home Economics: Beatrice E. Billings, B.S., Cornell, 1930; M.A., Columbia, 1935.
Extension Editor: James W. Burke.
Extension Specialist in Vegetable Gardening: James W. Dayton, B.S., Massachusetts State College, 1913.
Junior Clerk and Stenographer: Kathleen J. MacDonald, B.S., Massachusetts State College, 1934.
Extension Specialist in Forestry: Robert B. Parmenter, B.S.F., University of Maine, 1918.
Extension Instructor in Farm Management: Raymond F. Pelissier, B.S., Massachusetts State College, 1933.
Junior Clerk and Stenographer: Margaret M. Perry.
Junior Clerk and Stenographer, Department of Agricultural Economics and Farm Management: Edna M. Swan.
Senior Clerk, Department of Agricultural Economics and Farm Management: Robert C. Tetro, B.S., Massachusetts State College, 1932.
Junior Clerk and Stenographer, Department of Agronomy: Ruth E. Warner, A.B., Smith, 1931.

D. Experiment Station

Entomologist, Elm Tree Disease Control: William B. Becker, B.S., New York State College of Forestry, 1935.
Assistant Research Professor of Agricultural Economics and Farm Management: Charles R. Creek, B.S.A., Purdue, 1930; M.S.A., 1934.
Technical Assistant in Horticulture: Constantine J. Gilgut, B.S., Massachusetts State College, 1931; M.S., 1934.
Technical Assistant, Seed Control: Olive M. Hoefle, B.S., Cornell, 1925.

Pathologist, Elm Tree Disease Control: Malcolm A. McKenzie, Ph.B., and A.M., Brown, 1926; Ph.D., 1935.
Research Professor of Home Economics: Helen S. Mitchell, A.B., Mt. Holyoke, 1917; Ph.D., Yale, 1921.
Technical Assistant in Pomology: Lawrence Southwick, B.S., Massachusetts State College, 1933.

E. Short Courses

Instructor in Horticultural Manufactures: Paul D. Isham, B.S., Massachusetts State College, 1929; M.S., 1932; Ph.D., 1935.
Instructor in Economics: Russell C. Larcom, A.B., Harvard, 1925; M.B.A., 1928.
Instructor in Landscape Architecture: Rudolph O. Monosmith, B.S., Mississippi State College, 1929; B.L.A., Massachusetts State College, 1933.

F. Library

Junior Library Assistant: John V. Healy, Ph.B., University of Chicago, 1932.
Junior Library Assistant: Marie J. vanWieren, B.S., Simmons College, 1933.

Table II.—Speakers for the Year

A. Convocation

1934
Dec. 6. Charles D. Hurrey—"America's Impact upon the Nations."
Dec. 13. Professor Maurice A. Blake, M.S.C., 1904, Rutgers University.
1935
Jan. 3. James A. Moyer, Director, Massachusetts Division of University Extension.
Jan. 10. President Bancroft Beatley, Simmons College.
Jan. 17. Professor Joseph S. Chamberlain, M.S.C.
Jan. 24. Professor John P. Marshall, Dean of the College of Music, Boston University.
Feb. 7. W. C. Wessel, Boy Scouts of America.
Feb. 14. President Hugh P. Baker, M.S.C.
Feb. 21. Waldo Cook, Editor, Springfield Republican.
Feb. 28. Samuel S. Wyer, Consulting Engineer, Columbus, Ohio
March 7. Dr. David Potter, M.S.C., 1916, Clark University.
March 14. Dr. Robert L. Kelly, Executive Secretary, Association of American Colleges.
March 21. Dean William L. Machmer, M.S.C.
March 28. Alvan T. Simonds, Fitchburg, Mass.
April 11. Col. E. Parmalee Prentice, Mount Hope Farm, Williamstown, Mass.
April 18. Dr. George E. McPherson, Belchertown State School.
April 25. Dr. Kenyon L. Butterfield, Amherst.
May 2. Professor Melvin Maynard Johnson, Boston University Law School.
May 9. Burnham Declamation Contest.
May 16. Joseph W. Bartlett, Trustee, M.S.C.
May 23. Senior Convocation.
Sept. 18. President Hugh P. Baker, M.S.C.
Oct. 3. Sidney B. Haskell, President, Synthetic Nitrogen Products Corporation.
Oct. 10. President James L. McConaughy, Wesleyan University.
Oct. 17. James Ernest King, Editorial Writer, Boston Transcript.
Oct. 24. Henry P. Kendall, Boston, Mass.
Oct. 31. Dr. C. Stuart Gager, Director, Brooklyn Botanical Garden.
Nov. 7. Dedication of Goodell Library.
Nov. 14. Abraham Krasker, M.S.C., 1922, Rockwood Park School, Boston.
Nov. 21. Madame Fernanda Doria, Mezzo Contralto.

B. Sunday Assembly

1934
Dec. 9. Rev. Hilda L. Ives, Rural Secretary, Massachusetts Federation of Churches.
Dec. 16. Rabbi Marius Ranson, Temple Sharey Tefilo, East Orange, N. J.
1935
Jan. 6. Professor Clyde E. Wildman, Boston University.

Jan. 13. Dr. Henry H. Crane, Elm Park Methodist Episcopal Church, Scranton, Pa.
Jan. 20. Rev. C. Leslie Glenn, Christ Church, Cambridge, Mass.
Jan. 27. President Albert W. Beavan, Colgate-Rochester Divinity School.
Feb. 10. Rev. Charles W. Gilkey, University of Chicago.
Feb. 17. Rev. Frederick K. Stamm, Clinton Avenue Congregational Church, Brooklyn, N. Y.
March 10. Rev. Daniel Bliss, Old South Church, Boston.
March 17. Bishop Charles Wesley Burns, Methodist Episcopal Church, Boston.
March 24. Rev. Wendell Phillips, Trinity Church, New Rochelle, N. Y.
Sept. 22. Rev. Arthur Lee Kinsolving, Trinity Church, Boston.
Sept. 29. Professor Clyde E. Wildman, Boston University.
Oct. 6. Professor Clyde E. Wildman, Boston University.
Oct. 20. Rev. James Gordon Gilkey, South Congregational Church, Springfield.
Oct. 27 and Nov. 3. Professor David Adams, Mount Holyoke College.
Nov. 17. Rev. James Gordon Gilkey, South Congregational Church, Springfield.
Nov. 24. Bishop Charles Wesley Burns, Methodist Church, Boston.

Table III.—Attendance

	Registration Nov. 1, 1934			Registration Nov. 1, 1935		
	Men	Women	Total	Men	Women	Total
A. Graduate Students	82	30	112	96	26	122
B. Undergraduate Students						
Senior Class	147	56	203	153	68	221
Junior Class	163	72	235	176	63	239
Sophomore Class	194	66	260	198	78	276
Freshman Class	225	96	321	239	89	328
Special Students	1	1	2	–	–	–
Totals	730	291	1,021	766	298	1,064
C. Stockbridge School						
Second year	62	3	65	93	4	97
First year	118	6	124	135	4	139
Specials	3	2	5	1	2	3
Totals	183	11	194	229	10	239
D. Short Course Enrollment						
Winter School	151	7	158	151	6	157
Summer School	26	31	57*	64	68	132
Non-Credit Courses	–	–	–	13	89	102
Totals	177	38	215	228	163	391
Grand Totals (excluding duplications)	1,172	370	1,542	1,319	497	1,816

*Graduate students not included but listed under that heading above.

D. Educational Meetings	1934	1935
Adult Alien Education Conference	–	100
Agricultural Alumni Seminar	–	129
Agricultural Teachers of High Schools	75	–
American Society of Agricultural Engineers	163	–
Amherst Boy Scouts, 1934 (10); 1935 (6)	463	200
Amherst Boy Scouts' Parents Night	–	30
Amherst Camera Club	–	28
Amherst Christian Endeavor	–	60
Amherst Cub Scouts	–	20
Amherst Cub Scouts Parents Night	–	45
Amherst District Committee Boy Scouts	–	40
Amherst District Scout Masters (2)	–	82
Amherst Nature Club, 1934 (5); 1935 (2)	175	70
Basket Ball Officials' Examination	10	–
Basket Ball Tournament Committee	15	8
Boy Scout Banquet (2)	–	687
Camp Middlesex (4-H Club)	160	138
Cape Cod Cranberry Growers' Association (Wareham)	–	375

College Livestock Judging Teams	–	45
College Religious Workers	–	18
College Teachers of Education	–	29
Commissioners—Hampshire County Boy Scouts	–	15
Conference with C. E. Delegates on Cooperation with 4-H	–	30
Connecticut 4-H Dairy Club	–	35
Connecticut Valley Branch of Society of Physical Education	40	–
Connecticut Valley Congregational Club	–	100
Connecticut Valley Day	1,000	925
Connecticut Valley Onion and Potato Show Committee	10	–
Connecticut Valley Pomona Grange Field Day	50	–
Connecticut Valley Section of American Bacteriologists	60	–
Connecticut Valley Section of American Chemical Association	75	–
Connecticut Valley Student Missionary Retreat	–	60
County Agricultural Agents' Dairy Conference	20	–
Country Life Conference	100	–
Dads' Day	430	400
Dry Skiing Group	20	–
Eastern States Cooperation League	–	100
Economic Departments of Connecticut Valley Colleges	60	–
Economics Conference	12	–
Elementary School Principals' Conference	400	500
E.R.A. Supervisors and Agents of Women's Work	–	66
Executive Committee of New England's Scout Executives	20	–
Excelsior Club	–	16
Extension Service Conference, 1934 (2)	220	125
Extension Workers and Washington Officials	–	50
Faculty Women's Extension Group (4)	–	105
Fancy Ice Cream Demonstration	40	–
Farm and Home Week	3,800	4,500
F.E.R.A. Meat Canning Classes	40	–
Field Day (Waltham Field Station)	1,132	1,292
Florists' School (Waltham Field Station)	137	–
Former Camp Gilbert Members	–	64
4-H All Stars (2)	–	44
4-H Alumni Club of Middlesex County	30	–
4-H Boys' Conservation Camp	–	31
4-H Club Agents' Conference	–	35
4-H Clubs, 1934 (10); 1935 (22)	197	559
4-H Food Leaders	–	25
4-H Garden and Dairy Day	175	100
4-H Garden Leaders of Western Massachusetts	70	–
4-H Girls' Conservation Camp	–	33
4-H Girls' Final Contests	–	150
4-H Judging Contests	90	105
4-H Junior Directors of Worcester County	16	–
4-H Service Clubs (5 different groups)	170	129
4-H State Camp	255	150
4-H Youth Conference	–	10
Four Western Counties, E.R.A. Nutrition Administrators	–	33
Four Western Counties Women's Club	–	100
Girl Scouts Sectional Meeting	200	–
Goodell Library Dedication	–	50
Hampden County 4-H Canning Leaders	–	10
Hampden County 4-H Garden Leaders	–	25
Hampden County Women's Club	100	–
Hampshire County Adult Canning Group	13	–
Hampshire County Boy Scout Masters	30	–
Hampshire County 4-H Canning Leaders	–	25
Hampshire County 4-H Annual Dairy Meeting	–	40
Hampshire County Dairy Meeting	–	43
Hampshire County Dress Review	–	20
Hampshire County Food Leaders	–	7

Hampshire County 4-H Leaders	76	112
Hampshire County Poultry Association Directors	12	–
Hampshire County Ministers' Association	100	–
Hampshire County Pomona Grange Field Day	150	–
Hampshire County Poultrymen	40	–
Hampshire County Recreation Group	–	30
Hampshire County Women's Advisory Council	–	9
Hampshire-Franklin Boy Scout Council	–	85
Hampshire-Hampden County Consumers' Council	–	150
Harvard Economics Group	–	19
Health Workers' Conference	33	–
High School Day	503	353
Highway Improvement Institute	150	200
Holyoke and Northampton Garden Club (2)	50	–
Holyoke Milk Dealers	35	–
Home Economics Extension Committee	–	22
Home Garden School	484	250
Home Service Directors for New England Electric Co.	–	18
Horse Show (R.O.T.C.)	–	1,000
Horticultural Show	11,837	14,250
Interscholastic Judging Contests	254	149
Japanese Flower Arrangement Demonstration	40	–
Land Bank Appraisers	–	30
Library Institute	125	–
Massachusetts Aborists' Society	70	–
Massachusetts County Commissioners' and Sheriffs' Association	–	55
Massachusetts Dairy Cattle Breeders	–	102
Massachusetts Federated Poultry Association and College Officials	15	–
Massachusetts Fruit Growers' Association Advertising Committee	15	–
Massachusetts Milk Inspectors	–	40
Massachusetts Selectmen's Association	–	70
Massachusetts Home Economic Association	–	150
Massachusetts Home Economic Extension Group	24	–
Massachusetts Federation of Garden Clubs	100	–
Massachusetts Nurses' Association	–	55
Massachusetts Town Clerks' Association	–	35
Massachusetts Tree Wardens	75	–
Massachusetts Veterinary Association	31	30
Middlesex County 4-H Delegates	100	96
Milking Machine Demonstrations	35	–
Mothers' Day	150	300
Nature Guide School on Wheels	–	28
New England Association of Camp Directors	30	–
New England Dairy Association	–	28
New England Grange Lecturers' Conference	–	1,000
New England Extension Foresters	20	–
New England Intercollegiate Fruit Judging Contest	12	–
New England Section, American Plant Pathologists	75	–
Norfolk County 4-H Delegates	–	30
Old Hampshire Planning Board	40	–
Parent-Teacher Association Presidents of Western Mass.	75	–
Pennsylvania Poultrymen's Tour	60	–
Poultry Breeders Conference	108	100
Pro Merito Society of Western Massachusetts	–	220
Recreational Conference	700	2,500
Religious Advisory Council	–	30
Representative Poultrymen and Officials	60	–
Rural Mail Carriers	–	22
Small High School Basket-Ball Tournament	14,580	16,000
Small High School Relays	400	300
Small High School Track Meet	500	300
Student Home Economics Conference	–	74

Student Scientific Conference	–	911
Supervisors of Adult Alien Education	–	60
Thatcher Hall and Goodell Library Cornerstone Program	100	–
Town and County Government Conference	–	103
Valley Wheel Conference	–	23
Vegetable Judging School for Agents and Agricultural Instructors	–	10
Vocational Agricultural Judging Contest	60	100
Western Massachusetts Basket-Ball Conference	75	75
Winter Sports Conference	40	25
Women's Advisory Council, Extension Service	75	75
Attendance Totals	41,587	51,835
Number of Meetings	82	104

Table IV.—Statistics of Freshmen Entering in September, 1935

A. *Home Addresses of Students (Classified by Towns and Cities)*

Adams	3	Groveland	2	Raynham	1
Agawam	2	Hadley	2	Rehoboth	1
Amesbury	1	Hanover	1	Revere	1
Amherst	23	Hardwick	1	Rockport	1
Arlington	3	Harwich	1	Rutland	2
Ashburnham	1	Haverhill	2	Salem	1
Ashby	1	Holyoke	21	Salisbury	1
Ashfield	1	Huntington	1	Saugus	2
Ashland	1	Irvington, N. Y.	1	Sharon	1
Bayport, N. Y.	1	Lawrence	1	Sherborn	1
Belchertown	1	Lee	3	Shrewsbury	1
Belmont	1	Leicester	1	Somerville	1
Beverly	3	Leverett	1	Southborough	1
Billerica	1	Lexington	1	Southbridge	2
Boston	25	Lynn	5	South Hadley	5
Bridgewater	1	Malden	4	South Winsor, Conn.	1
Brockton	2	Manchester	1	Spencer	1
Brookline	2	Marblehead	2	Springfield	12
Buckland	1	Maynard	1	Stockbridge	3
Canton	1	Medford	2	Stoneham	1
Chelsea	4	Medway	1	Stoughton	1
Chicopee	3	Melrose	2	Stow	1
Cohasset	1	Mendon	1	Sudbury	1
Colrain	3	Methuen	1	Sunderland	2
Conway	1	Middleborough	3	Templeton	2
Cummington	1	Milford	1	Townsend	1
Dalton	1	Millbury	1	Tyringham	1
Darien, Conn.	1	Milton	3	Walpole	1
Dartmouth	2	Montague	4	Waltham	1
Deerfield	1	Natick	1	Ware	1
Dudley	1	New Bedford	4	Wellfleet	1
Duxbury	1	Newburyport	1	Westfield	10
East Bridgewater	1	Newton	9	Weston	1
Easthampton	5	North Adams	1	West Springfield	4
East Longmeadow	1	Northampton	10	West Stockbridge	1
Edgartown	1	North Andover	1	Weymouth	1
Egremont	1	Northborough	2	White Plains, N. Y.	1
Fairhaven	2	Northfield	1	Whitman	1
Falmouth	1	Orange, Conn.	1	Williamsburg	1
Flushing, N. Y.	1	Oxford	1	Wilmington	1
Foxborough	2	Palmer	3	Winchester	1
Framingham	4	Pepperell	1	Winthrop	1
Franklin	2	Pittsfield	3	Worcester	10
Great Barrington	1	Plymouth	1	Yarmouth	1
Greenfield	8	Quincy	4	York, Pa.	1

B. *Home Addresses (Classified by States and Countries)*

	Number	Per Cent		Number	Per Cent
Connecticut	3	.91	New York	4	1.22
Massachusetts	320	97.56	Pennsylvania	1	.31
				328	100.00

C. *Home Addresses (Classified by Counties of Massachusetts)*

	Number	Per Cent		Number	Per Cent
Barnstable	4	1.25	Hampshire	51	15.94
Berkshire	18	5.63	Middlesex	41	12.81
Bristol	10	3.13	Norfolk	20	6.25
Dukes	1	.31	Plymouth	11	3.44
Essex	25	7.80	Suffolk	31	9.69
Franklin	23	7.19	Worcester	29	9.07
Hampden	56	17.50		320	100.00

D. Nativity of Parents

	Number	Per Cent
Neither parent foreign born	197	60.06
Both parents foreign born	79	24.08
Father (only) foreign born	32	9.76
Mother (only) foreign born	20	6.10
	328	100.00

E. Education of Father

	Number	Per Cent
Common School	119	36.28
High School	110	33.54
Business College	26	7.93
College or University	57	17.38
No statistics	16	4.87
	328	100.00

F. Occupation of Father

	Number	Per Cent
Agriculture and Horticulture	42	12.81
Artisans	67	20.43
Business	107	32.62
Professional	33	10.06
Miscellaneous	54	16.46
Retired	2	.61
Deceased	18	5.49
No Statistics	3	.91
Unemployed	2	.61
	328	100.00

G. Intended Vocation of Students

	Men	Women	Number	Per Cent
1. *Farming*, including Market Gardening, Nursery business, Florist's business, Fruit growing, Management of Estates, General farming, Poultry Husbandry, Livestock Breeding	15	1	16	4.88
2. *Agricultural Business*, including sales of agricultural products and other capacities such as the fertilizer industry, the feed industry, etc.	1	–	1	.30
3. *Science*, including Chemistry, Botany, Entomology, Bacteriology, etc., in such capacities as research experts, laboratory assistants, technologists	78	20	98	29.88
4. *Landscape Architects*, Agricultural Engineers, Foresters	18	2	20	6.10
5. *Teachers*, including College Professors, High School Instructors, Specialists in Extension Education, etc.	6	6	12	3.66
6. *Professional Practitioners*, including Physicians, Surgeons, Dentists, Lawyers, Veterinarians, Ministers, etc.	42	3	45	13.72
7. *Civil Engineers*	–	–	–	–
8. *Industrial Enterprises*, including Manufacturing, Merchandising, Advertising, Banking, Accounting, Real Estate, Insurance, etc.	12	2	14	4.27
9. Authors, Artists, Journalists, etc.	4	1	5	1.52
10. Home Economics	–	27	27	8.23
11. Social Service	12	11	23	7.01
12. Undecided	51	16	67	20.43
	239	89	328	100.00

H. Farm Experience

	Men	Women	Total	Per Cent
Brought up on a farm	29	13	42	12.80
Not brought up on a farm and having no or practically no farm experience	196	74	270	82.32
Not brought up on a farm but having had some farm experience	14	2	16	4.88
	239	89	328	100.00

I. Miscellaneous Statistics

Average age (years)	18.49

SUMMER SCHOOL ANNOUNCEMENT

For the session July 6 to August 15, 1936

MEMORIAL HALL

Erected in memory of the men of the College who died in the Great War. The center of summer school indoor recreation activities:—bowling, bridge, dancing.

STATE COLLEGE BULLETIN

Amherst, Massachusetts

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SUMMER SCHOOL STAFF

OFFICERS OF ADMINISTRATION

HUGH P. BAKER, D.Oec., LL.D. — *South College — President's House
President

WILLIAM L. MACHMER, A.M. — South College — 25 Amity St.
Dean

ROLAND H. VERBECK, B.S. — South College — 14 Orchard St.
Director of Summer School

FRED J. SIEVERS, M.S. — Experiment Station Office — 35 Fearing St.
Director of Graduate School

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Director of Extension Service

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Librarian

MRS. MARY L. BROUGHTON — Abigail Adams House
Matron of Women's Dormitory

FACULTY

HAROLD D. BOUTELLE, B.S., Ch.E. — Mathematics Building — 29 Lincoln Ave.
Instructor in Mathematics

HAROLD W. CARY, A.M. — Stockbridge Hall — R. F. D. 3, Amherst
Instructor in History

MRS. GLADYS COOK, M.S. — Experiment Station Office — 30 Lincoln Ave.
Instructor in Home Economics

LLEWELLYN L. DERBY — Drill Hall — 81 Pleasant St.
Assistant Professor of Physical Education

RICHARD C. FESSENDEN, Ph.D. — Goessmann Laboratory — 50 Pleasant St.
Assistant Professor of Inorganic Chemistry

HARRY N. GLICK, Ph.D. — Stockbridge Hall — 6 North Hadley Rd.
Professor of Psychology

FRANKLIN E. HEALD, A.M. — Stockbridge Hall — 5 Kendrick Place
Supervisor of Agricultural Teacher-Training, State Department of Education

PAUL D. ISHAM, M.S. — Horticultural Manufactures Lab. — 4 Cosby Ave.
Instructor in Horticultural Manufactures

RUSSELL C. LARCOM, M.B.A. — South College — Bay Road
Instructor in Economics

CLAUDE C. NEET, Ph.D. — Stockbridge Hall — 62 Pleasant St.
Instructor in Education

*First address is business, second is residence.

WALTER E. PRINCE, A.M. Stockbridge Hall — 25 Amity St.
Professor of English

VICTOR A. RICE, M.Agr. Stockbridge Hall — 35 Woodside Ave.
Professor of Animal Husbandry; Head of Department;
Head of Division of Agriculture

WALTER S. RITCHIE, Ph.D. Goessmann Laboratory — 12 Taylor St.
Professor of Chemistry and Head of Department

WINTHROP S. WELLES, M.Ed. Stockbridge Hall — 23 Lincoln Ave.
Professor of Education and Head of Department

VISITING INSTRUCTOR

WILLARD WATTLES, A.M. Stockbridge Hall —
Professor of English, Rollins College, Winter Park, Florida

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*First address is business, second is residence.

GENERAL ANNOUNCEMENT

The twenty-eighth session of the summer school at Massachusetts State College will begin July 6 and continue through August 14.

Admission. — There are no formal examinations for admission to the summer session. Students, both men and women, will be admitted to such courses as their preparation allows.

Purposes. — The summer school program is arranged for:

1. School superintendents, principals, and teachers connected with senior and junior high schools and elementary schools, who seek advanced instruction either with or without relation to an academic degree.
2. Teachers who desire to pursue courses that will better prepare them for their work.
3. College students who desire to further their regular college work.
4. Any serious student who finds courses suited to his preparation and needs.

Full Session Courses

Registration. — Registration will be held in Memorial Hall from 9 A.M. to 4:30 P.M. on Monday, July 6. Late registrations should be made at the Short Course Office, South College. (Telephone Amherst 900.)

Classes will begin promptly at 8 A.M. Tuesday, July 7, and will be held as announced in the description of courses until Wednesday, August 12, inclusive. Examinations will be held on Thursday and Friday, August 13 and 14.

Classes will be held on Saturday, July 11, to make up Monday classes missed due to registration.

Change of Program. — Notice of any proposed addition or cancellation of courses after registration must be reported at once in person at the office of the Director of the Summer Session. Students will be allowed, after securing the consent of the Director, to make such additions or cancellations up to and including July 13. After July 13 they will be permitted to make no changes whatever. A student attending any course is required to do the full work assigned to the class, unless registered as an auditor.

Credits. — All courses are measured in terms of semester credit units. The number of college credits which may be earned in one summer cannot exceed six semester units.

Grades and Passing Mark. — All undergraduate grades are given in percentages with 60 as a required minimum for passing a course successfully.

Credit Courses Offered

General Chemistry
Inorganic Chemistry
Community Recreation
Current Economic Problems
Principles of Economics
Child Psychology
Classroom Management
Mental Hygiene
Philosophy of Education
Psychology of Guidance
Principles and Methods of Teaching
Problems in Vocational Teaching
Principles of Vocational Education
American Prose
Elizabethan Drama Prior to Shakespeare
Modern British and American Poetry, 1900-1936
Survey of American Poets, 1620-1900
Food Preservation
Fundamentals of Nutrition
Genetics and Eugenics
History of the United States, 1763-1860
International Relations Since the World War
Mathematics of Finance
Practical Computation

GRADUATE SCHOOL

Registration of Graduate Students. — (Summer Session.) Graduate students not candidates for an advanced degree at Massachusetts State College must submit evidence of their graduation, but are not required to file transcripts of their past training. All such should consult the Director of the Graduate School and secure his consent before registering for any courses. Such students may obtain, upon request to the Director, an official statement of the work completed in the Summer Session.

Graduate students desiring credit toward an advanced degree at the Massachusetts State College must meet the requirements of the Graduate School at the time of their registration, as follows:

Admission. — Admission to the Graduate School will be granted:

1. To graduates of the Massachusetts State College.
2. To graduates of other institutions of good standing who have received a bachelor's degree substantially equivalent to that conferred by this college.

Admission to the Graduate School does not necessarily admit to candidacy for an advanced degree, students holding a bachelor's degree being in some cases permitted to take graduate work without becoming candidates for higher degrees.

Applications for membership in the Graduate School should be presented to the Director of the Summer Session accompanied by an official transcript of the applicant's undergraduate, and any graduate work he may have had, and by a statement whether the applicant desired to work for a degree.

Registration is required of all students taking graduate courses, the registration card being obtained through the Director of the Summer Session.

Fees. — For graduate students the usual Summer School expenses of tuition and special fees will be collected.

Graduate Studies. — Some graduate work is available during every term of the college year. In the summer session, however, special arrangements must be made with the head of the department in which the student plans to take work, except in the case of courses offered in this circular.

During the present summer session these courses may be taken for credit towards an advanced degree.

Current Economic Problems
Child Psychology
Classroom Management
Mental Hygiene
Philosophy of Education
Psychology of Guidance
Principles and Methods of Teaching
Problems in Vocational Teaching
Principles of Vocational Education
American Prose
Elizabethan Drama Prior to Shakespeare
Modern British and American Poetry, 1900-1936
Survey of American Poets, 1620-1900
Food Preservation
Fundamentals of Nutrition
Genetics and Eugenics
History of the United States, 1763-1860
International Relations Since the World War

EXPENSES

There is a tuition charge of $3.50 for each semester credit. All fees must be paid to the College Treasurer, Fred C. Kenney, within one week from the opening date.

A special recreation fee of $2.50 must be paid at time of registration by each student registering in the six weeks session for credit courses. There are no exceptions to this rule.

Total expense for the six weeks summer session will probably vary from $80.00 to $100.00 as itemized below.

	Low	*High*
Tuition (3-6 semester hours)	$10.50	$21.00
Recreation Fee	2.50	2.50
Board	36.00	42.00
Room	18.00	18.00
Books	5.00	10.00
Laboratory Supplies	2.00	4.00
Laundry	6.00	6.00
	$80.00	$103.50

Rooms (Women). — The women's dormitory is available for women students. There are thirty double and thirty-eight single rooms. A uniform rate of $3.00 per week will be charged each student. *Each one will be required to supply her own blankets, sheets, pillow cases, etc.* Convenient arrangements for laundry work may be made in Amherst. *Students taking rooms in the dormitory must conform to dormitory regulations.* Observance of these regulations is one of the conditions under which the rooms are rented and failure to comply with the regulations will mean a surrender of the room and a forfeiture of the amount paid. A student whose conduct is not satisfactory may be asked to withdraw from the dormitory.

All requests for dormitory rooms must be made to the Treasurer of the college. A deposit of $3.00 is required in order to secure a reservation in the dormitory. Students will be notified by the Treasurer, upon receipt of the fees, as to the location of the room. In case any change is desired, the request should be made immediately. Deposits will not be refunded after the beginning of the summer session. The deposit is applied to total payment for the room at registration.

Rooms (Men). — The new men's dormitory, Thatcher Hall, with accommodations for one hundred and fifty students is available for summer school men this year. The same procedure should be followed in reserving rooms and paying initial fees as explained in the previous paragraph. Bed linen and blankets must be furnished by each student. Reservations in the men's dormitory must be received by Treasurer F. C. Kenney not later than July 1, since a minimum of twenty-five occupants is required if the building is to be used.

Otherwise, there is an ample supply of furnished rooms in private homes convenient to the campus at moderate rates. A list of desirable locations will be available at time of registration.

Board. — The college maintains a cafeteria on the self-service plan in Draper Hall, on the college grounds. Board may be had at from $6.00 to $7.00 a week. Good boarding places can also be secured outside of the college if desired.

Transportation. — The railroads of the New England Passenger Association will authorize a reduced round trip rate of fare and one-third. Busses connect with railroads at both Greenfield and Northampton. Trunks should be sent by express to avoid necessity of rehandling here.

Reduced rates of fare and one-third for round trip have been authorized on the Identification Certificate Plan by all carriers in the New England Passenger Association territory, the Central Passenger Association, and the Southeastern Passenger Association.

Prospective students who have sent in application blanks for entrance to the summer session, and who desire to secure benefits of the reduced railroad rates, should apply for Identification Cards to the Director of the Summer Session.

Date of sale from stations in the territory served are from July 2 to July 7, and final return limit August 20.

These tickets are good for transportation from point of departure to Northampton, Massachusetts, the nearest large railroad terminal. From there busses may be secured every hour for the seven mile trip to Amherst.

RECREATION

The Summer Session offers many advantages. Amherst, a quiet college town located in the beautiful Connecticut Valley and rich in historical lore, beckons the summer visitor. The living conditions are excellent and especially desirable for students who wish to spend a part of the summer in study in restful surroundings.

The social life of the Summer School is attractive. There are many interesting places — groves, brooks, woods, near Amherst which are easily accessible, especially for those with cars.

Several picnic parties to such scenic spots as Mount Holyoke, Whately Glen and Sky Pasture in the Pelham Hills are arranged each summer and have come to be one of the most pleasurable parts of the recreation program.

The Annual Farm and Home Week held under the direction of the College Extension Service in July brings hundreds of people to the campus for the four-day program. This year the dates are July 28 to July 31 inclusive. A fine program of lectures, with many speakers of national prominence, gives summer school students an unusual opportunity during this session. No extra fees. Plan to have your friends visit the college at that time.

Golf. — Amherst has a fine nine-hole course and privileges are extended to summer school students at a special rate for the six weeks.

Swimming. — The College swimming pool, located in the Physical Education Building, will be available from July 6 to the end of the session. Recreation fee includes this privilege without further cost to the student.

Tennis. — There are several tennis courts available for summer school students.

Badminton, archery, softball and horseshoe pitching are other sports which may be enjoyed.

When desired, all equipment for these sports will be furnished except for such items as tennis balls or badminton "shuttles."

Informals. — At regular intervals informal social gatherings are held in Memorial Hall with dancing, bridge, bowling, table tennis and shuffleboard.

Recreation for the Summer Session will be under the direction of Professor Llewellyn L. Derby of the Department of Physical Education.

CAMPUS FACILITIES

The College. — The College campus occupies an attractive site three-quarters of a mile north of Amherst center. The College has over 700 acres of land, most of which is in a high state of cultivation, and illustrates most of the leading agricultural industries of Massachusetts. There is a large range of greenhouses of the most modern and approved type; there is a modern dairy barn with a large herd of pure-bred cattle; there are good

horses, pure-bred swine, sheep, and poultry; there are fields of corn, potatoes, clover, and grass in season; orchards of apple, peach, plum, and pear trees; tracts of good forest land, nurseries, and market gardens. There are also considerable tracts devoted to experiments, many of which are of unusual interest. Then there are well-equipped departments of botany, entomology, and chemistry, dealing in the most thorough manner with these special sciences. These advantages of plant, equipment, and teaching staff are made available to Summer School students.

Libraries. — The College Library contains over 100,000 bound volumes and a very large collection of pamphlets, which are of great practical value, being monographs on the technical subjects studied in the College. These pamphlets include particularly the publications of the United States Department of Agriculture and those of the State Experiment Stations of other Agricultural colleges in this country and abroad. Among the bound volumes, works on agriculture, horticulture, botany, entomology and the various sciences, connected especially with agriculture predominate, but literature, history, economics, religion, sociology and art are also well represented. More than five hundred periodicals, covering technical and general subjects, are regularly taken and both the current numbers and the back files are readily accessible.

The Library is open for readers from 8:00 A.M. to 5:00 P.M. during the summer.

There are numerous department libraries, such as those in Stockbridge Hall, and French, Marshall, and Clark Halls, where many valuable publications may be used.

The main Library has just moved into its new building, the Goodell Library, which is the result of thirty years of effort and planning. This building offers unusual conveniences for study and research, with many separate study desks, and space to keep materials for thesis work together. For those interested in library facilities in their home communities, the Goodell Library building is worthy of study, for its practical or functional arrangement, unusual day and night lighting, and other novel features which make it a step forward in American library design. The librarian will be very glad at any time to discuss these problems with those who may be interested.

The town of Amherst in its Jones Memorial Library offers further additional advantages of unusual interest.

College Bookshop and Soda Fountain. — The College maintains a bookstore providing all textbooks used in courses. This is located in North College. A full line of paper, notebooks, and writing materials is carried. There is also a well-equipped soda fountain, and light lunches, ice cream, and smokers supplies are on sale. Since the college is situated about one mile north of the town and away from the shopping centre, it is hoped this convenient arrangement will aid students in supplying their various needs.

SUMMER SCHOOL COURSES

BIOLOGY

Fundamentals of Nutrition.

This course is designed to give the student an understanding of the digestion, assimilation, and utilization of foods by the human body. The materials included in the course should be of value to teachers of physiology, hygiene, foods work and physical education, and to the student who desires a knowledge of how the body functions.

The course will include discussions of the mechanics of digestion, the sources and functions of enzymes, the functions of proteins, carbohydrates, fats, minerals and vitamins in the body, energy metabolism, circulation, respiration, excretion, and the functions of those endocrine glands primarily concerned with nutrition. The relation of the fundamental principles of nutrition to food selection and health habits, and to the evaluating of fads in diets and the claims of food advertisers, will be considered.

5 class hours a week. 2 semester credits.
10:00—10:50 M. T. W. Th. F.
Room 28, Goessmann Laboratory. Professor Ritchie

Genetics and Eugenics.

This course deals with the general problems concerned in human reproduction and inheritance. The main topics studied will consist of the physiology of reproduction, the physical basis of inheritance, and the mode of transmission of human characteristics. Consideration will also be given to such questions as the causes of variation, the relative importance of genetic and environmental influences, the mechanism of sex determination, as well as population trends, sterilization, and kindred eugenic problems.

5 class hours a week. 2 semester credits.
9:00—9:50, M. T. W. Th. F.
Room 102, Stockbridge Hall. Professor Rice.

CHEMISTRY

General Chemistry.

A course in General Chemistry for those who have had high or preparatory school chemistry or its equivalent. Topics included in the course are: atomic theory, periodic system, atomic and molecular weights, simple formulae, chemical equations, acids and bases, ionization, chemical equilibrium, atomic structure and valence. The descriptive chemistry of a few of the common elements will be included. The laboratory work is the central feature of the course, and is supplemented by the lectures. The object of the course is to give the student a scientific training as well as to prepare him for advanced courses. This course is equivalent to Chemistry 3.

5 class hours and 5 2-hour laboratory periods a week. 4 semester credits.
8:00—8:50; 10:00—11:50 M. T. W. Th. F.
Lect. Room 26; Lab. Room 12, Goessmann Laboratory,
Assistant Professor Fessenden

Inorganic Chemistry.

A review of the fundamental principles of chemistry, intended for teachers and others having a knowledge of General Chemistry who wish to obtain a more comprehensive view of the subject than is possible in a beginning course. Some of the topics included in the course are: periodic system, atomic structure, states of matter, valence, atomic and molecular weights, ionic equilibrium, hydrolysis, oxidation-reduction. Recent advances in theory will be emphasized. The course will include reading assignments in the literature and may be enlarged to include assisting in the preparation and demonstration of lecture table experiments.

5 class hours a week. 2 semester credits.
2:00—2:50 M. T. W. Th. F.
Room 26, Goessmann Laboratory Assistant Professor Fessenden

ECONOMICS

Current Economic Problems.

This is an advanced course in Economics. It is especially designed for students who wish to obtain a better understanding of the effects of recent changes in our economic system and its institutions. A study will be made of some of the outstanding economic problems connected with labor, corporations, business consolidations, money and banking, taxation, and foreign trade. Class discussion and assigned reading.

5 class hours a week. 2 semester credits.
8:00—8:50 M. T. W. Th. F.
Room 201A, Stockbridge Hall Mr. Larcom

Principles of Economics.

This is an introductory course which aims to explain the workings of our economic system. It consists of a presentation of some of the fundamental characteristics and institutions of modern economic society such as competition, private property, specialization, the corporation, and money and credit; an analysis of the principles determining exchange value or price; and the principles determining the distribution of income. The emphasis is on principles with such factual material as is necessary. The course will be conducted mainly by general class discussion and assigned readings.

5 class hours a week. 2 semester credits.
10:00—10:50 M. T. W. Th. F.
Room 201A, Stockbridge Hall Mr. Larcom

EDUCATION

Classroom Management.

The meaning here is productive control of classroom conditions. The course in Principles and Methods of Teaching, deals with class procedures. The objective in Classroom Management is to create or maintain conditions in classrooms favorable to studying and learning effectively. It is the sum total of plans for making methods productive.

For the experienced teacher the course may discover more effective ways of arranging conditions for study; of projecting the effects of school efforts farther beyond the school; of securing improvement in pupil response and attitude.

For the beginner, it provides the items for the making of a management blueprint for future days of teaching, that may reduce the heavy mortality among young teachers due to failure in school control.

The means used are: a text, case studies, experience, discussion, supplementary reading and special study reports.

5 class hours a week. 2 semester credits.
2:00—2:50 M. T. W. Th. F.
Room 113, Stockbridge Hall Professor Welles

Philosophy of Education.

Biology, genetics, physiology, psychology, sociology, etc., have contributed a mass of heterogeneous data pertaining to man. Some of the results in these various fields are consistent, some are inconsistent and some are antagonistic. Upon each set of facts is based some educational theory with the result that we have a bedlam of educational doctrines more or less opposed to each other. It is one purpose of this course to see these results as a whole and to indicate their total significance for education. The course also emphasizes the significance for education of certain factors which may not be considered scientific at all; for example, religion, art, music.

The general aim is to take all available knowledge of the factors which influence men and on the basis of these factors attempt to understand the type of educational discipline which is best adapted to man both from the standpoint of his nature and his destiny.

5 class hours a week. 2 semester credits.
10:00—10:50 M. T. W. Th. F.
Room 113, Stockbridge Hall. Professor Glick

Principles and Methods of Teaching.

For teachers of experience, a critical study of basic principles and accepted methods of teaching and their application; for prospective teachers, an introduction to the professional view of their work. In both instances care is taken that theory is interpreted in concrete situations and uses, in which right principles and methods of teaching are identified. The teaching procedures of experienced people are put to the test in the light of basic and enduring principles. By these they may check future work and know that it is on solid foundations. By being part of operation the beginner learns how to remove much of the element of guess and insure acceptable results from defensive procedures.

The means used are: a text, case studies, experience, discussion, supplementary reading and special study reports.

5 class hours a week. 2 semester credits.
11:00—11:50 M. T. W. Th. F.
Room 113, Stockbridge Hall. Professor Welles

Problems in Vocational Teaching.

For employed teachers and directors of vocational agriculture. Prospective candidates may be admitted by special arrangement. The course deals with problems which grow out of the experiences of Massachusetts teachers of vocational agriculture; methods and technique of teaching agriculture. Visits are made to schools and to pupils on farms. Constructive assignments bearing upon the individual experiences and prospects of the members of the class are merged with the campaigns under way for better teaching in agricultural schools.

It is desirable that, by previous correspondence, a plan may be developed with reference to individual problems and the instructor will recommend some definite data to be secured, relating to the problem, before the summer school opens.

10 class hours a week. 3 semester credits.
8:00—9:50, M. T. W. Th. F.
Room 317, Stockbridge Hall Mr. Heald.*

Principles of Vocational Education.

A study of the laws, rulings and policies in Federal and State supported vocational education in the United States. The philosophy and experiences leading to the legislation and the evolution of a well defined body of practice especially in Massachusetts since 1906. The types of work involved, the occupations represented, the administrative and supervisory problems, standards set, approval factors, machinery necessary and dangers to be avoided. Day schools, part-time and continuation schools, evening schools. Relation to other secondary education. While leaning toward the agricultural field, this course avoids the specific phase treated in the "Methods" courses. Normally Mr. R. O. Small, Director of Vocational Education, and Mr. R. W. Stimson, Super-

*Supervisor of Teacher Training for Agricultural Schools representing the State Department of Education.

visor of Agricultural Education, each give one week of service in this course. Brief correspondence in advance addressed to the instructor in charge will enable the student to secure maximum values from the course.

6 class hours a week. 2 semester credits.
10:00—10:50, M. W.; 10:00—11:50 T. Th.
Room 317, Stockbridge Hall. Mr. Heald.*

ENGLISH

American Prose.

A study of American thought and culture through a consideration of a half-dozen prose writers who, by common consent, are regarded as voicing in their work the intellectual and artistic values which have proceeded from our civilization. It will be one of the chief objects of the course to show how American life and the changing character of its ideals are mirrored in the work of its most significant thinkers and men of letters. The men themselves, the forces that moulded them and helped to shape their contribution will be set forth. Their thought and its evaluation will be considered as important as their style or expression of the thought. Both are significant. The men studied will be Irving, Melville, Hawthorne, Emerson, Thoreau, Mark Twain.

5 class hours a week. 2 semester credits.
11:00—11:50 M. T. W. Th. F.
Room 111, Stockbridge Hall Professor Prince

Elizabethan Drama Prior to Shakespeare.

This course is planned especially to fit the needs of those secondary school teachers who wish to fill out rather fully their knowledge of the situation and conditions prevailing in English drama just previous to the time when Shakespeare entered upon his work as actor and dramatist in the professional theatre of that day. It is the purpose of the course to indicate the way in which the field was made ready for the great master; the conditions which he faced; the themes, the motives, the stories, the characters, the kinds of style, the stage effects which served as models and incentives for him in his work as playwright for his company. In brief, it will be the object of this course to help the student understand how conditions were prepared for the brilliant comedies and the supreme tragedies which Shakespeare was to create. A terse account of medieval drama will be set forth first, followed by a consideration of the status of drama found in those decades of the sixteenth century prior to the appearance on the scene of the Man from Stratford. Special attention will be given to a study of the immediate predecessors of Shakespeare from whom he learned so much in the way of dramatic technique—John Lyly, George Peele, Robert Greene, Thomas Kyd, Christopher Marlowe.

5 class hours a week. 2 semester credits.
9:00—9:50 M. T. W. Th. F.
Room 111, Stockbridge Hall Professor Prince

Modern British and American Poetry, 1900-1936.

Beginnings of modern poetry are traced, from Crane and Dickinson in America and from Hardy and Kipling in England, with emphasis upon major figures and significant schools. Special attention is given to methods of critical appraisal and to social and philosophical trends as reflected by the chief contemporary British and American poets, among them, Housman, Davies, Yeats, Masefield, Frost, Robinson, Sandburg, and Eliot. A private collection of first editions and autographed letters will be available

*Supervisor of Teacher Training for Agricultural Schools representing the State Department of Education.

to students .This course is identical with one given by the instructor at the Bread Loaf Summer School of English. Basic text: Untermeyer one-volume combination, Modern American and Modern British Poetry, (Harcourt Brace).

5 class hours a week. 2 semester credits.
10:00—10:50 M. T. W. Th. F.
Room 111, Stockbridge Hall. Professor Wattles

Survey of American Poetry, 1620-1900.

Brief consideration of Colonial period, followed by more thorough study of figures from Freneau to Frost, with emphasis upon Emerson, Poe, Whitman, Lanier, and Dickinson. Considerable attention also to Bryant, Whittier, Lowell and Longfellow. Basic text: Chief American Poets, by Curtis Hidden Page, (Houghton Mifflin). Recommended for reference, Fred Lewis Pattee's, First Century of American Literature, American Literature Since 1870, and The New American Literature, 1870-1930. (Century Company).

5 class hours a week. 2 semester credits.
1:00—1:50 M. T. W. Th. F.
Room 111, Stockbridge Hall. Professor Wattles

HISTORY

History of the United States, 1763-1860.

A study of the growth of the United States emphasizing republican institutions and traditions. Developments such as the states rights issue, the Marshall tradition of the powers of the Supreme Court, political democracy, Hamiltonian and Jeffersonian philosophies, policy of neutrality and isolation, will be studied in the light of the underlying geographic, social and economic factors. Attention will be devoted to readings in the recent historical literature in which new interpretations have been developed.

It is intended that a similar course for the period from 1860 to the present shall be offered in the summer of 1937 to afford the student a complete review of our national history.

5 class hours a week. 2 semester credits.
11:00—11:50 M. T. W. Th. F.
Room 201A, Stockbridge Hall Mr. Cary

International Relations Since the World War.

A consideration of recent world politics, including such problems as disarmament, security, the Manchurian and Ethiopian situations. The diplomatic relations will be approached through a study of the national policies of the great powers as interpreted in the light of the social, economic and strategic factors. Newspaper and periodical readings will be employed to supplement textual material.

5 class hours a week. 2 semester credits.
2:00—2:50 M. T. W. Th. F.
Room 201A, Stockbridge Hall. Mr. Cary

HOME ECONOMICS

Institutional Foods and Management.

This course is planned for students interested in institutional work. The course includes the principles of organization, personnel management, the administration of the food department, food costs, operating expenses, and the special function and duties of the dietitian. The methods of preparation of food in large quantities, study of utensils used, and apportioning of foods to large numbers of people will constitute the laboratory work which will be conducted in the college Dining Hall. The course will include field trips for observation of the dietary, housekeeping and laundry departments of various institutions.

5 class hours and 5 4-hour laboratory and field trips a week. 6 semester credits.
8:00—8:50 M. T. W. Th. F.; Laboratory work by arrangement.
Lect. Experiment Station Office; Lab. Draper Hall. Mrs. Gladys Cook
Note: Enrolment for this course is strictly limited and applications must be approved by the office of Home Economics before registration will be accepted.

HORTICULTURAL MANUFACTURES

Food Preservation.

For Home Economics students and teachers of Home Economics. This course covers the general field of food preservation. A textbook is used as a basis for classroom exercises. The laboratory work deals with the canning of fruits, vegetables, meats and poultry and the manufacture of food products including jams, jellies, conserves, marmalades, pickles, fruit butters, etc. The course offers study and practice of the most efficient methods and the facts, theories, and problems involved.

2 class hours and 3 2-hour laboratory periods a week. 2 semester credits.
8:00—8:50 T. Th.; 8:00—9:50 M. W. F.
Lect. Room 110; Lab. Room L, Horticultural Manufactures Laboratory. Dr. Isham.

MATHEMATICS

Mathematics of Finance.

A discussion of the mathematical principles of simple and compound interest, annuities, depreciation, valuation of bonds, insurance. Textbook and lectures.

5 class hours a week. 2 semester credits.
9:00—9:50 M. T. W. Th. F.
Room 12, Mathematics Building Mr. Boutelle.

Practical Computation.

A discussion of absolute and relative error, significant figures and round numbers, short methods and approximations, accuracy of computations based on approximate data, averages, probable error; with special reference to problems arising in the field of statistical analysis. Lectures and assigned poblems.

5 class hours a week. 2 semester credits.
11:00—11:50 M. T. W. Th. F.
Room 12, Mathematics Building. Mr. Boutelle.

PHYSICAL EDUCATION

Community Recreation.

This course is offered to assist in solving the leisure-time problem by giving training in many recreational activities.

From the theoretical side the history, nature and function of play will be considered.

Attention will be given to program planning for recreation in the community and the home and for such occasions as play days and picnics.

There will be practice in a wide range of recreational activities, such as tennis, golf, badminton, swimming, soft ball, hiking, archery and horseshoe pitching. Trips will be taken to nearby parks and playgrounds to observe activities in progress.

(Credit will not be given in this course to Massachusetts State College undergraduates because of similar requirements scheduled during the regular college year.)

1 class hour and 2 2-hour laboratory periods a week. 1 semester credit.
2:00—2:50 F.; 2:00—3:50 T. Th.
Drill Hall. Assistant Professor Derby.

PSYCHOLOGY

Child Psychology.

This course is intended to be of practical and theoretical value to teachers, prospective teachers, and parents, and to those who have an interest in the problems, needs, and behavior of the developing child. The aim will be to develop an intimate appreciation and understanding of the mental and physical activities of the child in everyday situations from birth to adolescence. The following topics will be considered: original nature, mental and physical development, emotions, play, social behavior, language and speech defects, learning, moral behavior, personality, and mental hygiene. Mental and physical abnormalities of the child with resulting behavior problems will also be considered. Textbook, outside readings, informal discussions, and case studies.

5 class hours a week. 2 semester credits.
1:00—1:50 M. T. W. Th. F.
Room 113, Stockbridge Hall. Dr. Neet.

Mental Hygiene.

This is a comprehensive practical course designed for teachers, prospective teachers, and parents, for those who deal with children and the public, and those who wish to know more about the development of good personality habits and proper individual and social mental hygiene. The following general topics will be considered in a detailed manner: factors determining personality; inheritance and the development of personality and mental health; mental hygiene of infancy, childhood, and adolescence; and mental hygiene of the adult. In dealing with the above phases the course will draw upon the common-sense facts and cases of abnormal behavior as seen in child study, education, psychology, sociology, and physiology. These facts and cases will be organized in such a way as to be helpful in understanding the problems of personality and mental hygiene. Textbook, outside readings, informal discussions, and case studies. Attention will be given to special interests.

5 class hours a week. 2 semester credits.
9:00—9:50 M. T. W. Th. F.
Room 113, Stockbridge Hall. Dr. Neet.

Psychology of Guidance.

The task of guidance is to direct individuals into activities in which each can participate efficiently and happily, it being understood of course that the activities considered are for both the individual and the social good. This necessitates the measurement and evaluation of aptitudes, interests, and personality traits. Tests and other methods of determining aptitudes are studied, applied, and evaluated. The aptitudes receiving most attention are: scholastic, mechanical, musical, artistic, and social. Attempts at measuring interests and personality traits by tests, interviews, questionnaires, etc., are studied and evaluated. The general problems of developing and administering a guidance program are discussed.

5 class hours a week. 2 semester credits.
8:00—8:50 M. T. W. Th. F.
Room 113, Stockbridge Hall. Professor Glick.

OTHER EDUCATIONAL OPPORTUNITIES

AT

MASSACHUSETTS STATE COLLEGE

The Four Year Undergraduate Course

The four year course, leading to the Bachelor of Science degree, offers opportunity for major study in the fields of Agriculture, Horticulture, Physical and Biological Sciences, Social Sciences and Home Economics. Strong supporting courses are given in the Humanities and special training is offered for those who wish to prepare for teaching in any of the fields mentioned.

The requirements for admission are based upon the completion of a four year high school course or its equivalent. Fourteen and one-half units must be offered; eight and one-half in a prescribed group including English, foreign languages, mathematics, and history; and two to six in the restricted elective group selected from additional science, history, and language. Free electives not to exceed four units may be substituted for a corresponding number of units in the restricted elective group.

The normal annual expense of a student in this course is $550.00 which may be reduced to $450.00 by strict economy. These amounts cover the annual tuition charge of $100.00 for residents of the State and other strictly college expenses. They do not include amounts for clothing, travel, etc., which vary so much with individuals. Some opportunities for loans and scholarships and for work on the campus are available.

Student life is wholesome and interesting, and constitutes an important part of the educational process. Intercollegiate and intramural athletics are conducted with the aim of giving every student an opportunity to participate in some sport. Student academic activities such as musical clubs, dramatics, debating, publications and judging teams are well supervised and participation in them not only offers splendid training, but is considered a high campus honor.

For over half a century this College has offered a high grade of educational training to its students and its Alumni have taken many important responsibilities throughout the world.

For catalog and further information write the Dean, Massachusetts State College, Amherst, Mass.

The Graduate School

The purpose of the Graduate School is to provide qualified students with proper guidance in the methods of advanced study and research. Courses leading to the degrees of doctor of philosophy, master of science, and master of landscape architecture are available. Students who desire advanced courses but who do not wish to become candidates for advanced degrees also may be admitted.

Admission to the Graduate School may be granted to graduates of the Massachusetts State College and to graduates of other institutions of good standing who have received a bachelor's degree substantially equivalent to that conferred by this College.

MASSACHUSETTS STATE COLLEGE

1936 Summer Session

ADVANCE APPLICATION FOR CREDIT COURSES

July 6 — August 15

Name .....

Address .....

Are you a teacher? ..... Where? ..... Subject? .....

Are you a College Graduate? ..... Institution, Degrees, Dates? .....

Are you a Normal School Graduate? ..... Institution, Dates? .....

Are you a High School Graduate? ..... Institution, Dates? .....

Are you a College Student? ..... Where? ..... Year .....

Do you desire graduate credit? ..... Where? .....

Do you desire college credit? ..... Where? .....

Please list courses in which you intend to enroll:

.....

.....

.....

.....

Send to Short Course Office, Massachusetts State College, Amherst, Mass.

THE STOCKBRIDGE SCHOOL OF AGRICULTURE

A Two-Year Non-Degree Course in Vocational Agriculture

For more than fifteen years the Massachusetts State College, in addition to its degree courses, has been conducting non-degree courses for students who wish to get fundamental training in some agricultural business. More and more, high school graduates, not otherwise prepared for college entrance, whose inclinations are towards the practical field of agriculture are finding the work of this department of the College well suited to their needs.

It will help you in your vocational guidance work in high school to know fully what service we can render you and your students, through the Stockbridge School of Agriculture.

The work is divided into eight major programs—dairying, animal husbandry, poultry, floriculture, horticulture, pomology, vegetable gardening, and wild life management, one of which is selected by the student, depending on the job for which he wishes to secure training.

No entrance examinations are required. Minimum age seventeen years; minimum schooling eighth grade. Two hundred and forty students were enrolled in 1935. Ninety per cent are high school graduates.

The first year consists of six months' study at the College and six months of required agricultural placement training, under the supervision of the College. During the placement period the student is expected to learn much of the practical side of his particular vocation. He is recommended to a position. These positions are on farms, in dairies, greenhouses, poultry plants. The nature of the position depends on the student's particular objective.

The second year consists of eight months' study at the College. On the completion of the course a diploma is granted. Tuition is $50.00 a semester to residents of the State. Semester begins October 5, 1936.

STATE COLLEGE BULLETIN . . . .

HIGH SCHOOL GUEST DAY

MASSACHUSETTS
STATE
COLLEGE

MAY 2
1936

TWENTY SEVENTH ANNUAL
HIGH SCHOOL GUEST DAY
AT
MASSACHUSETTS
STATE
COLLEGE

Saturday, May 2, 1936

An Invitation To
HIGH SCHOOL JUNIORS AND SENIORS
THEIR TEACHERS
and
PARENTS

To Visit the College; to Inspect the Campus, the Class Rooms, Laboratories, Dormitories; to Learn, First Hand, of the Educational advantages of Massachusetts State.

A Letter from President Baker

HUGH POTTER BAKER
PRESIDENT, MASSACHUSETTS STATE COLLEGE

To juniors and seniors in high schools throughout the state, to their teachers and parents:

It is my privilege, annually, to invite high school juniors and seniors from all Massachusetts to come to our campus early in May, to visit their state college, and to learn, first hand, of the educational opportunities presented by Massachusetts State. For more than twenty five years these annual High School Guest Days have brought an interested group of young men and women to our campus; and have succeeded, we feel, in proving of help to these young people as they choose their college and their careers.

Massachusetts State College prepares its students professionally, in science, in agriculture, in horticulture, and further, equips and trains them to lead fuller, richer, more satisfactory lives.

A full program has been arranged for May 2. It includes a military exhibition; visits with faculty guides to the various departments and buildings; and a ball game and a presentation by the college musical groups.

Dean Machmer and Dean Lanphear will both be present, throughout the day, in Memorial Hall, to grant personal interviews and to explain in detail just what our curriculum provides.

Because, through the years, these personal interviews have become so important and helpful, and because parents and teachers, as well as students, have become so interested in them, I am pleased to invite the teachers and parents to come to the campus, on May 2, and to discuss, with the deans, any problems or questions of entrance or of curriculum.

The entire program is designed to interest and instruct not only the visiting students, but, also, their teachers and parents. I hope many of you will come.

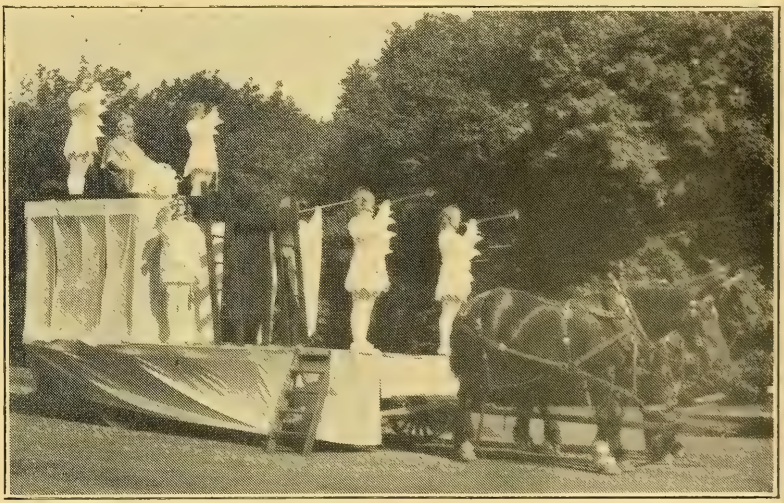
Cordially yours,

HUGH P. BAKER.

Dean Lanphear
cusses entrance
uirements with
high school senior
d with the boy's
her.

The ball game is sure to be interesting.

ne Roister Doisters,
e college dramatic
oup, are here photo-
aphed as they pre-
nt a 15th-century
iracle play. The
ister Doisters will
ke part in an enter-
inment on Saturday
ternoon, May 2.



High School Guest Day
Saturday, May 2, 1936

Massachusetts State College was chartered in 1863, by federal law, to be the land grant college, so-called, in this state.

The object of the College as stated in the charter was to provide a liberal and practical education, at low cost, for sons and daughters of citizens of the State. The College does provide just such education.

The curriculum is divided into six major divisions, namely: physical and biological sciences, social sciences, agriculture, horticulture, home economics and physical education. A student may do his "major" work in any one of these divisions, specializing, for instance, in chemistry, botany, English, dairy science, landscape architecture, nutrition, teacher-coaching, or in one of many other subject-matter fields.

The student body is composed of approximately 800 men and 300 women in the regular, 4-year course; and 250 men and women in the 2-year vocational school of agriculture which is called the Stockbridge School.

Average student expenses, for one year, are about $550 or $600. This includes board, room, books, fees, tuition and other expenses. Students often meet part of their expenses through jobs available to them either on the campus or in the town.

The campus is beautifully located in the northern part of the town of Amherst, and comprises over 700 acres of ground. Buildings are arranged in a large oval, circling the college pond.

Visitors to Massachusetts State College on High School Guest Day may have personal conferences with Dean Machmer or with Dean Lanphear, at which time they may discuss entrance requirements, and, also, the selection of "major" subjects and the opportunities for student self-help.

Visitors may inspect buildings, classrooms, laboratories, under the personal guidance of members of the faculty, and may learn, thereby, of the nature of courses offered by the six major divisions.

Miss Edna Skinner, advisor of women, and Miss Margaret Hamlin, vocational counselor for women, will be in Memorial Hall until noon, on May 2, to greet women visitors. Mr. Roland Verbeck, director of the Stockbridge School of Agriculture, will be in his office in South College from nine until noon to interview applicants for admission and to discuss opportunities offered by the Stockbridge School.

In the afternoon, visitors will be guests at a presentation by the student musical and dramatic groups and at a varsity baseball game between Massachusetts State and Worcester Polytechnic Institute. This will officially conclude the High School Guest Day program.

PROGRAM

High School Guest Day

Massachusetts State College

Saturday, May 2, 1936

9:00 A.M.–12:00 M.	Registration and inspection of Campus. ALL VISITORS ARE REQUESTED TO COME AT ONCE, ON ARRIVAL IN AMHERST. TO MEMORIAL HALL AND TO REGISTER, THERE, AT THE INFORMATION DESK. STUDENT INVITATION CARDS ARE HERE EXCHANGED FOR TICKETS ADMITTING TO THE EVENTS OF THE DAY.
9:30 A.M.–10:00 A.M.	Mounted drill and exhibition by the R. O. T. C. unit, under the auspices of the military department, at the riding park south of Paige Laboratory.
10:15 A.M.	Groups of visitors, under guidance of members of the faculty, will leave Memorial Hall to visit classrooms and laboratories. Visitors should be at Memorial Hall promptly at 10:15.
11:30 A.M.–1:00 P.M.	Lunch may be secured at the college cafeteria, Draper Hall, at moderate cost.
1:15 P.M.	A presentation by the college dramatic and musical groups, Stockbridge Hall.
4:00 P.M.	Varsity baseball game, Massachusetts State vs. Worcester Polytechnic Institute.

FROM 9:30 A.M. UNTIL NOON, AND FROM 3:45 P.M. UNTIL 4:30 P.M.
DEAN MACHMER
WILL BE IN ROOM 4, MEMORIAL HALL
AND
DEAN LANPHEAR
WILL BE IN ROOM 1, MEMORIAL HALL
FOR PERSONAL INTERVIEWS

NOTE: The program is so arranged that most visitors may return to their homes on Saturday evening. However, for those who wish to remain in Amherst on Saturday night, rooms in the homes of townspeople may be secured at $1.00 per person. Reservations may be made by addressing the Field Secretary, Massachusetts State College; but, requests for reservations should be made two weeks in advance.

For extra copies of this booklet, and for invitation cards, address the Field Secretary, Massachusetts State College.

STATE COLLEGE BULLETIN
AMHERST, MASSACHUSETTS

VOLUME XXVIII APRIL, 1936 NUMBER 4

PUBLISHED EIGHT TIMES A YEAR BY THE MASSACHUSETTS STATE COLLEGE, JANUARY, FEBRUARY, MARCH, APRIL, MAY, JUNE, OCTOBER, NOVEMBER. ENTERED AT POST OFFICE, AMHERST, MASS., AS SECOND-CLASS MATTER.

PUBLICATION OF THIS DOCUMENT APPROVED BY THE COMMISSION ON ADMINISTRATION AND FINANCE
5m-3-'36. No. 6996

STATE COLLEGE BULLETIN

MASSACHUSETTS STATE COLLEGE

1936 COMMENCEMENT

THE program and a cordial invitation to Alumni and friends to join in the festivities of the Sixty-sixth Commencement.

THE CAMPUS

Amherst, Massachusetts

June 5, 6, 7, 8, 1936

South and North Dormitories

THE PRESIDENT'S LETTER

To Alumni of Massachusetts State:

If the exercises of graduation and the events commonly associated with them are properly named, they should mark the beginning of new experiences and new ambitions. While it is not inappropriate for the graduating student to give some thought to those cherished preceding four years nor for the alumnus to recall fondly his undergraduate experiences, the main emphasis should be upon the view ahead. Especially today, when there is such great need for constructive thought and effort, we can and should make commencement the occasion for inspiring thought and renewing right determinations.

Our College commencement this year offers, I believe, to alumni no less than to graduating students, opportunity for this inspiration and renewal of purpose. I call to your attention particularly the baccalaureate address by Dr. Daniel Poling of New York, the graduation address by President Farrell of Kansas State and the talks by prominent alumni at the Saturday noon luncheon.

You will find many other events in the program which will appeal to you. Speaking for the College and for myself, I urge you to return to Alma Mater this June for what I am sure is going to be an outstanding commencement.

Cordially yours,

Hugh P. Baker.

Thatcher Hall

PROGRAM

Friday, June 5, 1936

2:00 P. M. Annual Spring Horse Show, Riding Park.
7:30 P. M. Flint Oratorical Contest, Memorial Hall.

Saturday, June 6, Alumni Day

8:30 A. M. Roister Doister Breakfast, Draper Hall.
10:30 A. M. Annual Meeting, Associate Alumni, Memorial Hall.
12:00 M. Alumni Luncheon and Speaking Program. Table Service by caterer at Drill Hall.
2:45 P. M. Alumni Parade from Drill Hall to Alumni Field.
3:30 P. M. Varsity Baseball Game with Amherst, Alumni Field.
4:00 P. M. Alumnae Tea, Memorial Hall.
6:00 P. M. Fraternity and Class Reunions as arranged by organizations.
9:00 P. M. Roister Doister Play "You Never Can Tell" by G. B. Shaw. Bowker Auditorium.

Sunday, June 7, Baccalaureate Sunday

9:00 A. M. Academics and Varsity Club Breakfast Meetings, Draper Hall.
11:00 A. M. Fraternity and Class Reunions as arranged by organizations.
4:30 P. M. Baccalaureate Service at Rhododendron Garden. Address by Dr. Daniel Poling.
5:30 P. M. President's Reception at President's House.
8:00 P. M. Concert by the College Band — Rhododendron Garden.

Monday, June 8, Class Day

10:00 A. M. Semi-Annual Meeting of the Board of Trustees.
10:00 A. M. Senior Class Day Exercises, Rhododendron Garden.
*4:00 P. M. Academic Procession from Fernald Hall.
*4:30 P. M. Graduation Exercises, Rhododendron Garden. Address by President Francis D. Farrell of Kansas State College.
8:00 P. M. Sophomore-Senior Hop, Drill Hall.

*If weather is inclement these exercises will be held in the Physical Education Building.

ALUMNI REUNION PROGRAM

Important Business Meeting of Associate Alumni at Memorial Hall at 10:30 A. M.

New arrangement for Alumni Luncheon and speaking program — Table d'hote service by caterer at Drill Hall followed by speaking program — tables reserved by classes — make your class reservations early.

Speakers

President Baker, Herbert J. Baker '11, Charles H. Gould '16, and other prominent Alumni

Music by the College Band

Alumni Marshal, Lawrence A. Jones '31

REUNION CLASSES

1886 (*50 year class*) Secretary, Richards B. Mackintosh, 110 Central St., Peabody, Mass. Headquarters, Room 3, Memorial Hall.

1891 (*45 year class*) Secretary, John B. Hull, Great Barrington, Mass. Chairman, reunion committee, Walter C. Paige, 85 St. Andrews Pl., Yonkers, N. Y. Headquarters, Room 4, Memorial Hall.

1896 (*40 year class*) Secretary, Asa Kinney, 70 Woodbridge St., South Hadley, Mass. Headquarters, Room 7, Memorial Hall.

1901 (*35 year class*) Secretary, James H. Chickering, Dover, Mass. C. E. Gordon, Amherst, Mass., in charge of local arrangements. Headquarters, Room 11, South College.

1906 (*30 year class*) Secretary, Richard Wellington, N. Y. Agri. Exp. Station, Geneva, N. Y. Ed Gaskill, Amherst, Mass., in charge of local arrangements. Headquarters, East Experiment Station and the Gaskill Farm.

1911 (*25 year class*) Secretary, Leonard M. Johnson, 9 Wooster Heights, Danbury, Conn. Fred McLaughlin, Amherst, in charge of local arrangements. Headquarters, Paige Laboratory.

1916 (*20 year class*) Dutch Schlotterbeck, 1 Vernon St., Wakefield, Mass., chairman, reunion committee. Headquarters, Alumni Room, Memorial Hall.

1921 (*15 year class*) Secretary, Don Douglass, 92 Kilburn Rd., Belmont, Mass. Headquarters, Room 8, Memorial Hall.

1926 (*10 year class*) Secretary, Mrs. Alton H. Gustafson (Maudie Bosworth), 186 Main St., Williamstown, Mass. Headquarters, Senate Room, Memorial Hall.

1931 (*5 year class*) Norm Myrick, Amherst, chairman, reunion committee. Headquarters, Room 10, Physical Education Building.

1933 (*3 year class*) Ben Cummings, Hadley, chairman, reunion committee. Headquarters, Room 9, Physical Education Building.

1935 (*1 year class*) Secretary, Ruth Lindquist, 42 Pleasant St., East Longmeadow. President, Ray Evans, New Savoy Camp SP-21, 143rd Co. C.C.C., No. Adams, Mass. Headquarters, Library, Physical Education Building.

Alumnae Headquarters are Room 2, Memorial Hall.

Dean Joseph L. Hills, of the University of Vermont, Burlington, and secretary of the class of 1881, writes that if it is possible his class will hold an informal, 55-year reunion.

Members of other classes need have no hesitation in returning for ample provision is being made for alumni of all classes.

VOLUME XXVIII MAY, 1936 NUMBER 5

Published eight times a year by the Massachusetts State College.
Entered at the Post Office, Amherst, Mass., as second class matter.

PUBLICATION OF THIS DOCUMENT APPROVED BY THE COMMISSION ON ADMINISTRATION AND FINANCE 4500-4-'36. No. 7600.

ANNOUNCEMENT
OF
THE STOCKBRIDGE SCHOOL
OF AGRICULTURE
AT
Massachusetts State College

The two year course in practical agriculture at the Massachusetts State College is known as The Stockbridge School, named after an early president of the College. Included herein are descriptions of the various courses offered, information concerning expenses, enrollment, regulations, etc. On the last two pages will be found forms for application and certificate of citizenship.

STATE COLLEGE BULLETIN
Amherst, Massachusetts

Volume XXVIII June, 1936 Number 6

Published eight times a year by the Massachusetts State College, January, February, March, April, May, June, October, November.

Entered at Post Office, Amherst, Mass., as second-class matter.

PUBLICATION OF THIS DOCUMENT APPROVED BY COMMISSION ON ADMINISTRATION AND FINANCE.

3m-5-'36. No. 7849.

STOCKBRIDGE HALL
Main Classroom Building and Bowker Auditorium

CALENDAR

THE STOCKBRIDGE SCHOOL OF AGRICULTURE

1936

October 5, Monday ..... Freshman Registration
October 6, Tuesday ..... Senior Registration
October 7, Wednesday ..... First semester begins for Seniors
October 12, Monday ..... Holiday, Columbus Day
November 11, Wednesday ..... Holiday, Armistice Day
November 25—November 30, Wednesday, 12:00 M.—Monday, 8:00 A.M. ..... Thanksgiving Recess
December 19—January 4, Saturday, 12:00 M.—Monday, 8:00 A.M. ..... Christmas Recess

1937

February 3, Wednesday, 5:00 P.M. ..... First semester ends
February 8, Monday, 8:00 A.M. ..... Second semester begins
February 22, Monday ..... Holiday, Washington's Birthday
March 27—April 5, Saturday, 12:00 M.—Monday, 8:00 A.M. ..... Spring Recess
April 19, Monday ..... Holiday, Patriots' Day
May 31, Monday ..... Holiday, Observance of Memorial Day
June 4–7, Friday–Monday ..... Commencement

STAFF

Officers of General College Administration

HUGH P. BAKER, D.OEC., LL.D.,
President of the College

WILLIAM L. MACHMER, A.M.
Dean of the College

ROBERT D. HAWLEY, B.S.
Secretary of the College

FRED C. KENNEY
Treasurer of the College

BASIL B. WOOD, A.B.
Librarian of the College

ROLAND H. VERBECK, B.S.
Director of Short Courses

STOCKBRIDGE ADVISORY COMMITTEE

President HUGH P. BAKER

Director ROLAND H. VERBECK, Chairman
Professor LYLE L. BLUNDELL
Professor ROBERT P. HOLDSWORTH
Professor GRANT B. SNYDER
Assistant Professor LUTHER BANTA
Assistant Professor ROLLIN H. BARRETT
Assistant Professor S. CHURCH HUBBARD
Assistant Professor MINER J. MARKUSON
Assistant Professor OLIVER C. ROBERTS
Instructor RICHARD C. FOLEY
Instructor HARRY G. LINDQUIST
Instructor RANSOM C. PACKARD
Instructor HAROLD W. SMART
Instructor CHARLES H. THAYER

Secretary ROBERT D. HAWLEY

The Faculty of Instruction

LORIN E. BALL, B.S. ..... 3 Allen Street
Instructor in Physical Education

LUTHER BANTA, B.S. ..... 7 Allen Street
Assistant Professor of Poultry Husbandry

ROLLIN H. BARRETT, M.S. ..... 45 East Pleasant Street
Assistant Professor of Farm Management

ETHEL W. BLATCHFORD, B.S. ..... 27 East Pleasant Street
Instructor in Physical Education

LYLE L. BLUNDELL, B.S. ..... 5 Northampton Road
Professor of Horticulture

JAMES D. CURTIS, M.F. ..... 9 Mount Pleasant
Instructor in Forestry

WILLIAM H. DAVIS, Ph.D. ..... 12 Nutting Avenue
Assistant Professor of Botany

LLEWELLYN L. DERBY ..... 81 Pleasant Street
Assistant Professor of Physical Education

LAWRENCE S. DICKINSON, B.S. ..... 2 Farview Way
Assistant Professor of Agronomy

RICHARD C. FOLEY, M.S. ..... The Campus
Instructor in Animal Husbandry

JULIUS H. FRANDSEN, M.S.A. ..... 35 Lincoln Avenue
Professor of Dairying and Head of Department

ARTHUR P. FRENCH, M.S. ..... North Amherst
Assistant Professor of Pomology

JOHN C. GRAHAM, B.S. Agr. ..... 68 Lincoln Avenue
Professor of Poultry Husbandry and Head of Department

EMORY E. GRAYSON, B.S. ..... 37 Cottage Street
Director of Placement Training

MARGARET HAMLIN, B.A. ..... 12 North East Street
Vocational Counsellor for Women

CURRY S. HICKS, B.Pd., M.Ed. ..... 43 Sunset Avenue
Professor of Physical Education and Head of the Division of Physical Education

MRS. CURRY S. HICKS, B.A. ..... 43 Sunset Avenue
Physical Director for Women and Head of Department of Physical Education for Women

ROBERT P. HOLDSWORTH, M.F. ..... 49 Amity Street
Professor of Forestry and Head of Department

S. CHURCH HUBBARD ..... North Amherst
Assistant Professor of Floriculture

BENJAMIN ISGUR, M.S. ..... R. F. D. 3
Instructor in Agronomy
PAUL D. ISHAM, Ph.D. ..... 4 Cosby Avenue
Instructor in Horticultural Manufactures
HELEN KNOWLTON, A.M. ..... 12 North East Street
Associate Professor of Home Economics
JOHN B. LENTZ, A.B., V.M.D. ..... 3 Dana Street
Professor of Veterinary Science and Head of Department
HARRY G. LINDQUIST, M.S. ..... 17 Fearing Street
Instructor in Dairying
ADRIAN H. LINDSEY, Ph.D. ..... Mount Pleasant
Professor of Agricultural Economics and Head of Department of Agricultural Economics and Farm Management
MERRILL J. MACK, M.S. ..... 10 South Prospect Street
Assistant Professor in Dairying
MINER J. MARKUSON, B.S. ..... 2 Cosby Avenue
Assistant Professor of Agricultural Engineering
RUDOLPH O. MONOSMITH, B.L.A. ..... 5 Hillcrest Place
Instructor in Horticulture
JOHN B. NEWLON ..... North Amherst
Instructor in Agricultural Engineering
RANSOM C. PACKARD, M.S. ..... North Amherst
Instructor in Bacteriology
CLARENCE H. PARSONS, M.S. ..... The Campus
Assistant Professor of Animal Husbandry and Superintendent of Farm
GEORGE F. PUSHEE ..... North Amherst
Instructor in Agricultural Engineering
ERNEST J. RADCLIFFE, M.D. ..... 109 Butterfield Terrace
Professor of Hygiene and Head of Department of Student Health
NATHAN RAKIETEN, Ph.D. ..... 35 Lincoln Avenue
Instructor in Physiology
VICTOR A. RICE, M.Agr. ..... 35 Woodside Avenue
Professor of Animal Husbandry and Head of Department, Head of Division of Agriculture
J. HARRY RICH, B.S. ..... 10 South Prospect Street
Assistant Professor of Forestry
OLIVER C. ROBERTS, B.S. ..... 10 Nutting Avenue
Assistant Professor of Pomology
JOSEPH R. ROGERS, JR. ..... 13 High Street
Instructor in Swimming
DONALD E. ROSS, B.S. ..... 12 East Pleasant Street
Instructor in Floriculture and Greenhouse Foreman
WILLIAM C. SANCTUARY, M.S. ..... 5 Allen Street
Professor of Poultry Husbandry
FRANK R. SHAW, B.S. ..... North Pleasant Street
Instructor in Entomology and Beekeeping
EDNA L. SKINNER, M.A. ..... 30 Fearing Street
Professor of Home Economics, Head of Division, Adviser of Women
HAROLD W. SMART, LL.B. ..... 115 Butterfield Terrace
Instructor in Business Law, Business English and Rural Sociology
GRANT B. SNYDER, M.A. ..... North Amherst
Professor of Vegetable Gardening and Head of Department
HARVEY L. SWEETMAN, Ph.D. ..... The Davenport
Assistant Professor of Entomology
WILLIAM H. TAGUE, B.S. ..... 45 Pleasant Street
Assistant Professor of Agricultural Engineering
CHARLES H. THAYER ..... South East Street
Instructor in Agronomy
CLARK L. THAYER, B.S. ..... 2 Mount Pleasant
Professor of Floriculture and Head of Department
REUBEN E. TRIPPENSEE, Ph.D. ..... 4 Chestnut Street
Professor of Wild Life Management
ALDEN P. TUTTLE, M.S. ..... Birch Lawn
Instructor in Vegetable Gardening
RALPH A. VAN METER, Ph.D. ..... North Amherst
Professor of Pomology and Head of Department, Head of Division of Horticulture
HENRY VANROEKEL, D.V.M., Ph.D. ..... 19 Hallock Street
Chief of Laboratory, Poultry Disease Control
JOHN H. VONDELL ..... 24 Fearing Street
Instructor in Poultry Husbandry and Foreman of Poultry Plant
HERBERT E. WARFEL, M.S. ..... North Amherst
Assistant Professor of Zoology

Instructor in Animal Husbandry

THE STOCKBRIDGE SCHOOL OF AGRICULTURE

A Two-Year Course in Practical Agriculture

The Stockbridge School of Agriculture, organized in 1918, is a separate and distinct department of the College providing training of a strictly vocational type in the fields of agriculture and horticulture.

Eight programs of study are offered, one of which must be selected by each student and completed as specified to be eligible for the school diploma. The present list of offerings includes:

1. Animal Husbandry . . . . . (see page 15)
2. Dairy Manufactures . . . . . (" " 18)
3. Poultry Husbandry . . . . . (" " 21)
4. Floriculture . . . . . (" " 24)
5. Fruit Growing . . . . . (" " 27)
6. General Horticulture . . . . . (" " 30)
7. Vegetable Gardening . . . . . (" " 32)
8. Wildlife Management . . . . . (" " 34)

Since its organization at the request of the Massachusetts Legislature, the school has registered over 2,000 students, graduated seventeen classes numbering more than 1,100 members, and enrolled for the last school year (1935–36) 239 young men and women.

The largest number of students comes from Massachusetts, but all the New England States are usually represented in the student body.

The value of this kind of concentrated, technical schooling, aiming directly toward preparation for a definite field of work, is amply demonstrated by the useful careers of our graduates.

General Information

Entrance Conditions:—The course is open to any student who is seventeen years of age or over and who has completed at least an elementary school course or its equivalent. There are no entrance examinations.

The Stockbridge School of Agriculture is not intended for students already enrolled in high schools. Such students should finish the high school course. Students enrolled in high schools who wish to take the course should bring a statement either from the principal of the high school or from the parent or guardian, indicating the reasons for such a change.

A graduate of a county school of agriculture or of an agricultural department of a high school may complete the course for a diploma in one year, if he is recommended by the Director of the school or the agricultural instructor. He must show a satisfactory record of practical experience and training which can be accepted in place of the first year Stockbridge program. This arrangement cannot apply to the Wildlife major and rarely to Horticulture and Dairy Manufactures.

How to enroll.—Fill out application blank in back of catalog giving all information requested. Be sure to indicate course you wish to elect. Mail this form, with citizenship certificate in back of catalog to Director of Short Courses. Special application for Wildlife Management Course will be sent on request. If application is accepted you will be notified, and certificate of citizenship will be kept on file until you register. No fees are required until registration. Registration will be held in Memorial Hall on Monday, October 5, for freshmen, and Tuesday, October 6, for seniors. All freshman students should be on campus from the day of registration until classes open on Thursday to meet required appointments for mental tests, physical examinations, and individual photographs for office records and to have class schedules and individual programs explained.

Instruction.—The instruction is given by the college teaching staff through classroom teaching, laboratory exercises and practical work. The work of the classroom is supplemented by demonstration work in the laboratory, dairy room, greenhouse and stables. It is designed to offer funda-

mental information, and to establish the underlying reasons as well as the special methods employed in the various operations. The advantages of the college instructors and the college plant with all its resources are thus made available to young men and women electing this course.

Credit and Diploma.—In order to obtain a diploma a student is expected to have satisfactorily completed all the work called for in the general course which he has selected. A student failing to pass the requirements of summer placement training, after a suitable job has been assigned him, is not eligible for graduation until this deficiency is made up, and may not be allowed to enroll for the second year, if the Director of Placement Service considers his record to be unsatisfactory.

Graduation Requirement.—No student will be graduated unless all bills due the college are paid on or before the Wednesday preceding the graduation exercises. If paid after that date, and otherwise eligible, he may graduate the following year.

Diplomas and letters of honorable dismissal will be withheld from all students who have not paid bills due the College, or legitimate bills due the clubs or private individuals.

Scholarship Regulations.—At the close of each semester students receive a formal report showing the standings given in the subjects pursued by them.

If a student's semester mark in any subject falls below 60 per cent, he is thereby failed (F) in the subject. He shall be debarred from taking the final examination in that subject and must repeat it with the following class.

If the average of the semester mark and the final examination is below 60 per cent, the student is thereby conditioned (#).

Student grades will be recorded at the end of the seventh week of each semester and again at the end of the semester. The Faculty Committee will consider all questionable grades after each marking period, and instructors will note on grade reports the names of all students whose work is seriously deficient.

When a student's record indicates failures or uniformly poor work, the Faculty Committee may recommend a close supervision of his work by the faculty adviser in his major course, or, if his scholastic grades disqualify him from further work in the school, he may be asked to withdraw at any time.

A first year student who has deficient scholastic work at the end of the first semester in February shall not be eligible for placement training until his work meets the required standard.

At the end of any semester a student who has a failure in more than one subject or is conditioned in more than two subjects may be dismissed.

RULES AND REGULATIONS

Absences from Class

(1) No unexcused absences will be allowed from classes. (2) All excuses for absence shall be presented by the student in writing, and, if approved by the Director, an excuse card will be granted to be signed by the instructor. Excuse cards must be returned promptly to the office when properly signed. (3) Students presenting excuse cards covering absences are expected to make up all work missed, to the satisfaction of the instructor. (4) Instructors are directed to reduce final grades five points for each unexcused absence occurring on a student's record at the end of any semester. **(5) No excuses will be accepted at the Short Course Office unless presented within two days after the student returns to classes. (6) Two tardinesses unexcused shall count as one absence. (7) Absences from classes immediately before or after a holiday are not allowed except by special permission. (8) The Short Course Office requires all students to report at once, any illness to the college physician, particularly if absence from class is likely to result**

from the illness. (9) Students failing to observe these rules are placed on probation, and may be asked to withdraw from the course if further violations occur.

Absences from Examinations or Tests

(1) Any student who absents himself from an appointed examination without sufficient cause shall be given zero thereon. In such case he shall not be entitled to a make-up examination unless the Director so requests. A previously announced test may, at the discretion of the instructor, be regarded as a test or as an examination.

(2) Every absence taken before enrollment (the signing of the registration card by the teacher) in a class will be counted.

Student Expenses

Tuition.—A tuition fee of $50 per semester is charged students, residents of Massachusetts, enrolled in the Stockbridge School of Agriculture. Students who are not residents of Massachusetts are charged a tuition fee of $110 each semester. The tuition per semester, charged persons not citizens of the United States is $110. **Students entering from Massachusetts, unless of voting age themselves, are required to file a statement signed by either town or city clerk, stating that the applicant's parent is a legal resident of Massachusetts.** (See form in back of catalog.)

The necessary college expenses are estimated as follows: Tuition, for citizens of Massachusetts, first year, first semester, $50; second semester (eight weeks only) $25, total $75. Second year, first semester, $50; second semester, $50, total $100. Total cost of tuition for full course, $175.

Students not residents of Massachusetts pay $110 tuition fee first year, first semester, and $55 second semester, (eight weeks only). Total tuition, first year $165. Second year, $110 each semester, total $220. Total tuition cost both years, $385.

Other costs are:

	First Year	Second Year	Total
Room in private houses	$72.00	$96.00	$168.00
Board in college cafeteria, weekly ticket 20 meals $6.25	150.00	200.00	350.00
Laundry	20.00	30.00	50.00
Books, stationery, etc.	30.00	45.00	75.00
Totals	$272.00	$371.00	$643.00
College tuition fee for citizens of Massachusetts	75.00	100.00	175.00
	$347.00	$471.00	$818.00

These figures for board and room are estimates based on prevailing prices and are subject to change when and if conditions change.

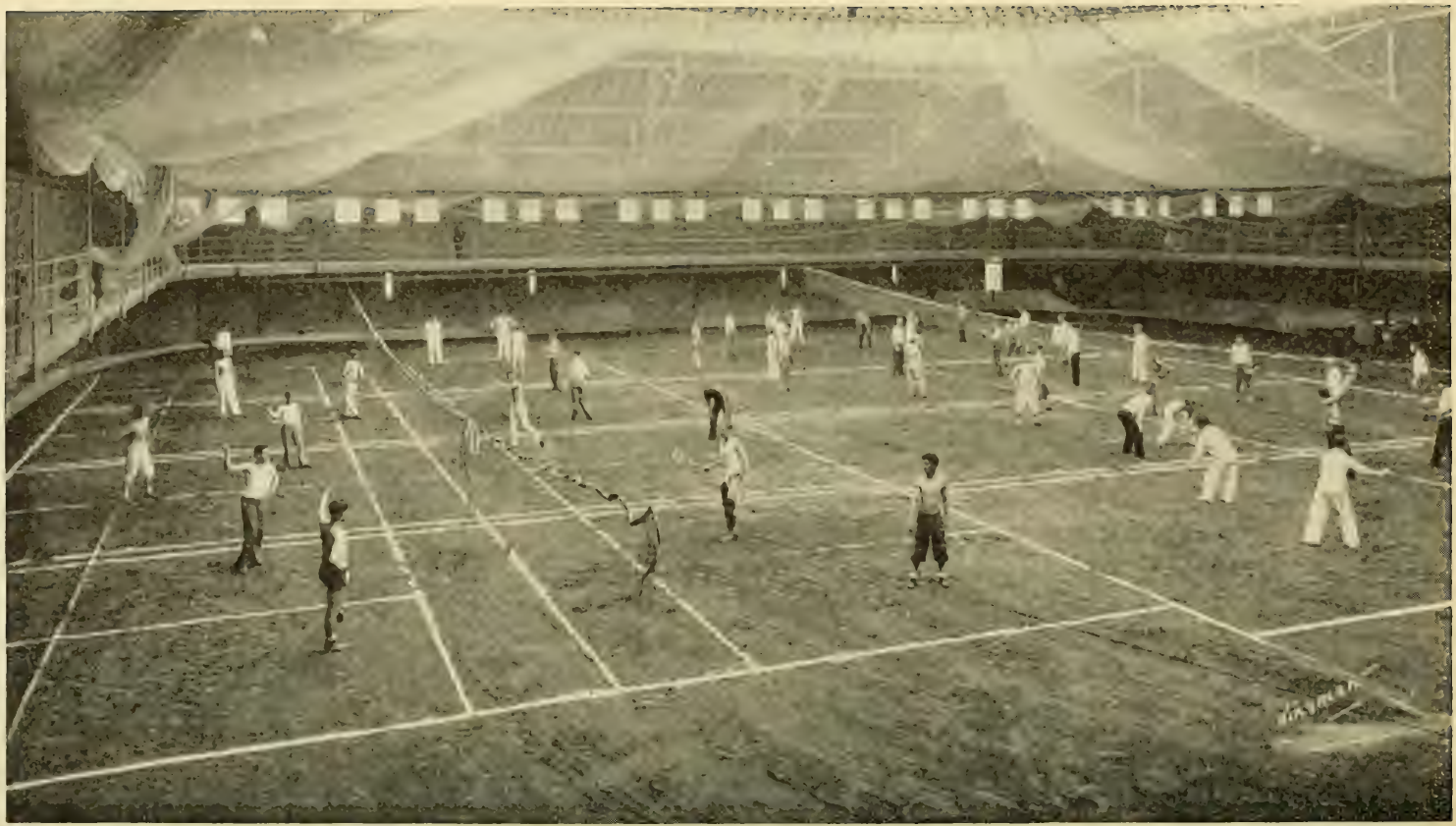
Special Taxes Voted by Students.

	First Semester	Second Semester
College Athletic Tax	$6.75	
(For freshmen, one-half semester)		$3.00
(For seniors, full semester)		6.75
Collegian Subscription	1.00	.50
Social Union	1.00	
United Religious Work	.25	.25
Stockbridge School Activities	1.00	1.00
Stockbridge Class Tax—usually	1.00	1.00
The Shorthorn—school yearbook		
Freshmen		3.00–4.00
Seniors		4.00–5.00

Tuition fees and special taxes are payable at the Treasurer's Office not later than one week after date of registration.

A student who withdraws from college for any reason before a semester is half completed will have refunded to him one-half the fees paid for that semester, but one who leaves after completing more than the half semester will be allowed no rebate of fees.

The six months' placement training between the first and second years enables a student to earn from $150 to $300 depending upon his skill and general ability, and the type of work. Of this amount $100 to $200 should be saved to apply to the expenses of the second year.



Physical Education Cage

Prospective students should understand that the above estimates cover expenses which may be called strictly college expenses, and that there are other financial obligations voluntarily placed upon students which they should expect to meet. Chief among these are class assessments and taxes levied for maintenance of various organizations, such as the Social Union, Athletic Association, weekly publications, etc. Such expenses vary from $15 to $30 a year. Additional financial responsibility is also assumed by students joining clubs or entering into other social activities of the college. Besides the amount necessary for clothes and traveling, the economical student will probably spend between $300 and $400 for the first year of one and one-half semesters in residence, and $400 to $500 for the second year of two semesters.

Student Aid

Self Help.—It is recommended that no new student enter without having at least $250 and preferably $350 with which to meet the expenses of the first year. **The college does not encourage students to enter without money in the expectation of earning their way entirely.** The student will find it better either to work and accumulate money before coming to college, or to take more than two years in completing his course, or, instead, to borrow money sufficient to carry him through. No student should undertake work that interferes with his studies, and students should understand that, owing to the large number of applications for employment, no one may receive a large amount of work at the college. A number of students find opportunities for earning money without depending upon the college to furnish them with work.

Federal Emergency Relief Administration funds were made available to provide part time employment for needy students during the past college year. It is expected a similar arrangement will be continued this year. Approximately ten per cent of the Stockbridge students were eligible for job opportunities under this plan. First-year students who wish to file applications for such employment should write Assistant Professor Guy V. Glatfelter at the College Placement Office. Personal interviews will be arranged after school opens.

First year students should not risk failure in their beginning studies at Stockbridge by taking on such extra work until they have, at least, tested themselves in the study program of the first semester. Certainly, it is advised to proceed cautiously in combining both extra work and athletics at the same time, if your scholastic record is at all questionable.

Rooms

Dormitory rooms are available only to students of the four year college course. Private homes in the town furnish the only source of rooms for Stockbridge students.

Rooms are inspected by the student health officer and students are expected to make their own rooming arrangements from a list of approved places available at the Short Course Office.

General Exercises

Assembly exercises are held weekly on Wednesdays, 11:00–12:00 M., and serve to bring together all Stockbridge students for a general program dealing with matters of interest to the College and the School. Among speakers who appear from time to time are the President of the College, members of the College staff, and occasionally other men who have interesting subjects to present. This weekly assembly also enables announcements concerning students and student affairs to be presented, and permits class presidents to make advance reservations for business meetings at least once a month when necessary.

Student Activities

A large number of student organizations furnish opportunity to students for work and leadership.

The Massachusetts State College Social Union was established about fifteen years ago. All students become members of the Union by paying a small fee, and in the fall and winter months the Union gives a series of entertainments, free to students and faculty. Memorial Hall is the center of student activities and contains offices for the various student organizations, including the Stockbridge School Student Council. On the first floor are located a lounging room, the Memorial Room, and the offices; in the basement, bowling alleys, pool and ping pong tables; and on the second floor an auditorium for meetings and dances. This building was erected by the alumni, students, faculty, and friends in honor of the fifty-one "Aggie" men who gave their lives in the World War.

The Stockbridge School Council is composed of representatives of the first and second year classes. This body serves as a general committee on student government and helps to maintain the best traditions and customs of the School.

A student yearbook called "The Shorthorn" is published annually by the members of the graduating class, and is usually issued in June. All students subscribe to it.

For those students who play musical instruments there is some opportunity with the College Orchestra and the College Band.

In the place of fraternities the faculty have authorized social organizations called "clubs" in the Stockbridge School. There are two such organizations in the student body, the A. T. G. Club and the Kolony Klub, both owning houses, serving as social and residential centers for their groups.

Athletics and Physical Education — The School has its own separate athletic program with regular schedules in football, basketball, ice hockey, cross-country and winter track. Sweaters and insignia are awarded to team members and managers in these sports. The official insignia is the letter S.

The football team plays a schedule of 7 games with preparatory school and college freshman teams. The basketball team plays a 10 game schedule; the cross-country team usually runs 3 races, while 2 or 3 meets are scheduled for the winter track squad. Ice hockey affords 6 to 8 games depending on the weather.

Due to the fact that freshmen are on placement training during the spring term which leaves only seniors available, no regular team is maintained in baseball. Men desiring to play are organized into teams and an intramural league is arranged. Numerals may be given for this participation.

This athletic program is entirely under the supervision and direction of the Physical Education Department of the College and coaches are provided for all sports. Instructor Lorin E. Ball, director of the Stockbridge physical education work is coach of football, basketball, and class baseball; and Assistant Professor Llewellyn L. Derby, coach of the varsity track team, has charge of the cross-country and winter track squads.

All students are urged to participate in some sport each semester, but first year students should be sure all studies are well maintained. No squads are reduced by eliminating the inexperienced players and everyone is given an opportunity to play in games. The football squads for the past two years have consisted of approximately 50 candidates. Games have been scheduled for both the second and third teams so that every man on the squad has participated in an outside scheduled game. Both the first and second teams in basketball have regularly scheduled games.

Every care is exercised to guard against men overtaxing their strength in any sport or game to the detriment of their health. No man whose physical condition is at all questionable is allowed to play on the teams. A careful check is maintained by required physical examinations for all students given by the college physician at the opening of the school year. A second ex-

amination is made of each man before permission is granted to participate in any sport.

Students also subscribe to the college varsity games and have attendance privileges for varsity sports on the campus.

Class work in physical education for men not on athletic squads is required for both seniors and freshmen during the first semester. This consists of 2 class periods a week. The object of this course is to give the men some knowledge of games which may be of value to them in after school days, as well as to give every man an opportunity to develop sufficient control over his body to enable him to get pleasure from physical activities and to establish correct health habits.

The freshmen receive instruction in soft ball, touch football, soccer, golf, and swimming. Men may elect football or cross-country, instead of the regular class work. The seniors take up volley ball, badminton, archery, and swimming. They may also elect football or cross-country. The classes are organized into teams which compete against each other with much rivalry. Students are expected to wear old clothes during the play period, and shower baths are required at the close of each class period.

A new physical education building containing a swimming pool, a great indoor cage 150 by 180 feet for all kinds of sports and games, and complete locker room and shower bath facilities provide ample equipment to carry out this program. Individual equipment is supplied to all members of the football, hockey, basketball, cross-country, and track squads.

STUDENT RELATIONS

The customary high standard of college men in honor, manliness, self-respect, and consideration for the rights of others constitutes the standards of student deportment.

Any student known to be guilty of dishonest conduct or persistent violation of rules must be reported by the instructor to the Director for discipline.

The privileges of the college may be withdrawn from any student at any time if such action is deemed advisable.

It should be understood that the college, acting through its President or any administrative officer designated by him, distinctly reserves the right not only to suspend or dismiss students, but also to name conditions under which students may remain in the institution. For example, if a student is not doing creditable work he may not only be disciplined, but he may be required to meet certain prescribed conditions in respect to his studies, even though under the foregoing rules his status as a student be not affected. The same provision applies equally to the matter of absences.

Similarly, also, it applies to participation in student activities. Though this will ordinarily be governed by the rules as already laid down, yet if in the judgment of the college authorities a student is neglecting his work on account of these activities, the privilege of participating in them may be withdrawn for such time as is considered necessary. Moreover, it may be withdrawn as a punishment for misconduct.

HEALTH SERVICE

The College endeavors to safeguard the health of all students while on the campus, and for this purpose maintains a Physician as Supervisor of Student Health, a resident registered nurse, and an infirmary.

(1) Physical examination by the Health Service is required of all undergraduate students annually, or oftener if indicated. This examination is given to freshmen during matriculation week. *Evidence of a SUCCESSFUL smallpox vaccination is required.*

(2) The Supervisor of Student Health has offices in the Physical Education Building where he may be consulted during college hours.

(3) Infirmary — Its purpose is to furnish a suitable place for professional attention in case of illness or accident. The out-patient clinic is held here daily.

(4) Students are urged to consult the Supervisor of Student Health or the resident nurse at the first sign of physical disorder or for even minor accidents. Many severe illnesses and much lost time can be avoided by early or preventive treatment.
(5) The infirmary charges will be at the rate of $2 per day, and will be charged when one or more meals are obtained at the infirmary or when the student remains at the infirmary for one or more nights. A nominal charge may be made to out-patients for miscellaneous treatment of a minor character.
(6) In addition to the fee charged as specified in paragraph 5, the following additional expenses will be charged to the patient.
   (a) *Nurses.* — In case a special nurse is required for the proper care of an individual the services and board of this nurse will be paid by the patient. Such a nurse will be under the general supervision of the resident nurse.
   (b) *Professional Service.* — If a student requires continuous medical attention by a physician, he may be required to select his physician and become responsible for fees charged by that physician.
   (c) *Supplies.* — Special medical supplies prescribed by a physician will be charged to the patient.
   (d) *Laundry.* — Expense for personal laundry incurred by students while in the infirmary will be charged to the individual student.

Goodell Library. — This fine new building completed in 1935 houses the College Library. This library contains one of the best collections in agriculture and related sciences in the country, with especial strength in entomology, botany, chemistry, horticulture, landscape architecture, soil science, and animal husbandry, but with considerable collections, also in literature, history, economics, and sociology. There are over 103,000 bound books, and over 50,000 classified pamphlets giving most recent information. The periodical file contains over 500 current magazines, both scientific and popular, and a careful selection of newspapers, together with many periodical publications of learned societies. The Library is unusually rich in files of journals and proceedings of Experiment Stations and learned societies. The building is open on week days from 8 A.M. to 10 P.M., and from 1.30 to 4.30 and 7 to 9 P.M. on Sundays during semesters and with somewhat shorter hours during vacations and Summer School.

The building is named in memory of Henry Hill Goodell, President of the College from 1886 to 1904 and College Librarian from 1886 to 1898.

AGRICULTURAL OPPORTUNITIES FOR WOMEN

Agriculture is a field in which women have always found some opportunity. There are women farming independently, in all branches of agriculture. As a rule poultry raising, small fruits and vegetable growing and floriculture seem to offer women an easier opportunity than dairy, stock and general farming. Women are also finding some paid positions which include farm and estate workers and managers, garden service workers and agricultural officers in state correctional institutions.

For the woman or girl whose home is already upon the farm the opportunity is exceptionally good. With the help of an agricultural education there are open to her many means of increasing her own or the farm income. With the knowledge of farm life which she already possesses, and with the possibility of securing occasional help from her family, she can easily carry on and develop a profitable enterprise of her own. The Stockbridge School of Agriculture will afford to the women who wish to engage in farming the practical training which they will need to fit them for their work, and will open to them new doors of opportunity. The particular problems which women engaged in farming will have to meet, and the special lines of farming in which they will have favorable opportunities, will be considered in a series of conferences.

Women who are interested in taking agricultural courses should correspond with Miss Margaret Hamlin, Placement Officer for Women.

POSITIONS

The College does not guarantee positions to students registered in any of its courses, but through the Placement Service it has an opportunity to recommend students for a large number of positions. A record is kept of each student's work and experience, and of his success in positions for which he has been recommended after he has finished his course. Opportunities for trained men and women, especially those who have had farm experience, are good.

A student desiring a recommendation from the college must meet the following conditions: —

(1) He must be of good character.
(2) His previous record must be good.
(3) His work in all courses must be satisfactory.

Students who have not previously had a considerable amount of practical experience cannot, as a rule, be recommended for positions of responsibility. This is especially true of the better positions for which managers or superintendents are wanted.

VOCATIONAL PLACEMENT

The work of locating first year students for apprentice training from April to October, after the resident term is completed, is in charge of the Director of Placement Service. Every effort is made to secure satisfactory positions affording the kind of training desired by the student, but the Placement Office cannot guarantee to place every student for training, when positions are not available. In normal times placement positions are secured for all students who are eligible under these conditions.

1. Positions are secured that will enable a student to gain practical experience in his particular vocation.

2. A student desiring placement at home may arrange for such assignment if the Director of Placement approves. As a rule, it will be found better for a student to spend this six months away from home even though he plans to be employed there after finishing the course. This statement is based on the experience of students who have already taken the course.

3. If credit is to be secured for the six months' placement training the following rules must be carefully observed.

Rules for Stockbridge Students on Placement

1. The student must interview the Director of Placement early in his first year in order that his qualifications, the type of work he wishes to pursue, and his general fitness may be determined.

2. No final arrangement for placement training may be made by the student himself until the Director of Placement has been consulted.

3. Students are required to complete their period of training without unnecessary absences.

4. No transfers are to be made by a student if he is to receive credit, until permission has been had from the Director of Placement.

5. A position may not be given up by the student until the Director of Placement has been notified.

6. A monthly report must be furnished on the form supplied, and submitted not later than the fifth of each month during his training period.

7. A student whose grade of work is regularly poor (below a 70 rating) in the classes of his major subject will not be eligible for placement training, unless recommended by the department in charge of his major work.

8. When a student fails to complete the requirements of his placement training with a satisfactory grade, he is not allowed to take the work of the second year.

9. All male students are given a thorough physical examination by the Department of Physical Education at the beginning of the college semester. Any disabilities liable to affect the student's placement work are noted, and,

if of a serious nature, recommendations for corrective measures are supplied. Parents should understand that most kinds of agricultural work require a well-balanced combination of brawn and brain. No student whose physical condition is questionable will be accepted for placement training without a physician's certificate, and parents' approval.

It should be clearly understood by both employer and employee that the same energy, regularity and general conduct will be expected of the student during his period of placement training as is expected in his work in classes and on the campus.

It should also be noted that this six months' experience is educational in its nature. Students are expected to earn and receive a reasonable wage, but the purpose of the training is the experience gained rather than the wage earned. The scale of wages may vary in different localities, but each man's ability is given very careful thought, that he may obtain a wage that is fair to him. In the event of any misunderstanding the supervisor should be immediately informed.

DESCRIPTION OF COURSES

ANIMAL HUSBANDRY

The Animal Husbandry major fits students to cope with the practical problems of live stock production and management. It supplements and supports but does not duplicate or replace the necessary experience gained only through actual manual work in caring for animals. As a foundation, the study of breed history, live stock trends, animal anatomy and physiology is required. Special attention is given to physiological processes in breeding and feeding. Later courses show how these processes actually function under the stockman's guidance.

A herd of about 200 dairy cattle including Ayrshires, Guernseys, Jerseys, Holsteins and Milking Shorthorns, a band of about a dozen Percheron brood mares, a flock of about 60 Southdown and Shropshire sheep and a herd of about 50 Berkshire and Chester White swine, together with modern barns and equipment for housing and caring for the above live stock, and a farm of several hundred acres used primarily for the production of feed crops, gives ample scope for illustrating and giving practice in modern methods of live stock handling. The farm and barns are our laboratory; the animals and accessories our equipment.

Graduates from the Animal Husbandry major for the most part secure positions as herdsmen or farm managers.

Animal Husbandry

First Year

First Semester

Agricultural Engineering S5 (Farm Engineering)
Animal Husbandry S1 (Types and Breeds)
Bacteriology S1 (Bacteriology and Rural Hygiene)
Business Law S1
Dairy S1 (General Dairying)
Soils and Crops S1 (Soil Management)
Agricultural Opportunities S1 (Required of women students)
Hygiene S-1 (Required of women students)
*Physical Education S1
Student Health S3 (Hygiene—required of men students)
Tractor Practice
Milking, Harnessing and Teaming

Electives

*Physical Education S1 is required of men students not participating in football; also required of women students.

Second Semester

(Eight Weeks Resident Instruction Followed by Six Months Placement Training)
Animal Husbandry S2 (Principles of Feeding)
Bacteriology S2 (Continuation of Bacteriology S1)
Business English S2
Forestry S2 (The Elements of Forestry)
Fruit Growing S10 (General Course)
Soils and Crops S2 (Fertilizers)
Physical Education S2 (Required of women students)

Electives

Home Economics S-2 (Problems in Personal and Home Living)
Physical Education S4 (Basketball and Hockey)

Second Year

First Semester

Agricultural Economics S1 (Farm Economic Problems)
Agricultural Engineering S7 (Farm Structures)
Animal Husbandry S3 (Animal Breeding and Herdbook Study)
Animal Husbandry S5 (Farm Meats)
Farm Management S1 (Farm Management and Accounts)
Rural Sociology S1 (Social and Economic Problems)
Veterinary Science S1 (Animal Sanitary Science)
Physical Education S5 (Required of men students not participating in football)

Electives

Physical Education S3 (For women)

Second Semester

Agricultural Economics S2 (Marketing)
Agricultural Engineering S2 (Farm Motors)
Animal Husbandry S4 (Live Stock Production)
Animal Husbandry S6 (Dairy Cattle and Milk Production)
Poultry Husbandry S10 (General Course)
Soils and Crops S4 (Field Crops)
Veterinary Science S2 (Applied Animal Sanitary Science)

Electives

Physical Education S4 (For women)
Physical Education S4 (Basketball and Hockey)
Physical Education S6 (Baseball)
Public Speaking S-4

Animal Husbandry S-1. (Types and Breeds) I.

Includes a study of the history, development and characteristics of the various breeds of cattle, horses, sheep and swine together with a discussion of the conditions to which each breed seems best adapted. Laboratory work consists of judging and evaluating as many rings of all the classes of farm live stock as time will permit. Textbook: Vaughan, "Breeds of Live Stock in America."

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Animal Husbandry S-2. (Principles of Feeding) II.

A study of the organs of digestion, digestion and absorption of foods, digestibility of feed stuffs, utilization of feed materials in growth, maintenance, fattening, work, and milk production, and the importance of minerals and vitamins is undertaken in the first part of the course. The last part of the course is devoted to a study of feeding standards and methods of calculating rations. The principles included in this course are designed to serve as a background for the practical feeding studies in later courses. Textbook: Henry and Morrison, "Feeds and Feeding."

5 class hours a week. Credit, 5.

Animal Husbandry S-3. (Animal Breeding and Herdbook Study) I.

Includes a study of the physiology of reproduction and of animal genetics as well as the art of breeding. Among the topics included are the Origin and Domestication of Farm Animals; Modern Theories of Heredity, Variation and Sex Determination; the Systems of Breeding — Cross-, Out-, Line-, and Close-Breeding; and the one paramount problem of animal breeding, namely, Selection. Considerable pedigree work in the student's favorite breed is also included. Prerequisites: Animal Husbandry S-1 and Animal Husbandry S-2. Textbook: Rice, "Breeding and Improvement of Farm Animals."

3 class hours and 1 2-hour laboratory period a week. Credit, 4.

Animal Husbandry S-4. (Live Stock Production) II.

This course includes studies of the production of horses, beef cattle, sheep and swine with emphasis on their place in New England agriculture. Attention is given to the general situation and outlook, distribution and adaptability of breeds, equipment, feeding, systems of management, management problems, disease control, fitting and showing, and practice in such skills as shearing, docking and castrating. Prerequisites: Animal Husbandry S-1 and Animal Husbandry S-2. Textbook: Henry and Morrison, "Feeds and Feeding."

3 class hours and 1 2-hour laboratory period a week. Credit, 4.

Animal Husbandry S-5. (Farm Meats) I.

This course includes a survey of the packing industry and follows the product (i. e. beef, pork, lamb and veal) from the feed-lot to the consumer's table. Practice is afforded in classifying animals as to market class and grade and in slaughtering, dressing, cutting and curing beef, pork, lamb and veal. At the end of the course a trip will be taken to several large packing houses in Boston consuming one day and costing about $10.00. Prerequisites Animal Husbandry S-1, Animal Husbandry S-2. Textbook: Tomhave, "Meat and Meat Products."

1 class hour and 2 2-hour laboratory periods a week. Credit, 3.

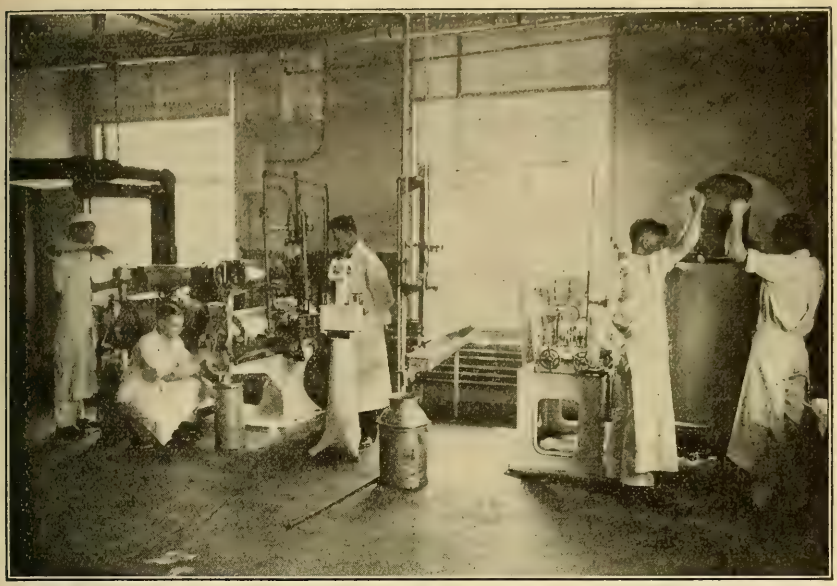
Animal Husbandry S-6. (Dairy Cattle and Milk Production) II.

For Seniors. — This course treats all phases of dairy cattle production and management. The student is provided with an opportunity to study and seek the solution to the various economic, nutritional, genetic and managerial problems concerned in successful dairying. Lectures will be supplemented with talks by specialists in the various fields. Laboratory will consist of a detailed study of methods used on the college farm, with practice in the various skills necessary for the hersdman or showman.

Trips to purebred live stock farms in the state for the purpose of inspection and advanced dairy cattle judging will be required on five Saturdays during the spring semester. The cost for transportation will not exceed $10.00.

4 2-hour laboratory periods a week. Credit, 4.

Note: — Every student in this course must qualify in tractor practice, milking, harnessing, and teaming, single and double. Arrangements for practice periods and examinations by special assignment. No student will be put in placement training who has not satisfied these preliminary requirements.



Ice Cream Making

Meats Class in College Abattoir

DAIRY MANUFACTURES

The Dairy Manufactures course is designed to fit men for positions with market milk concerns, creameries, ice cream factories, and specialized dairy farms.

All dairy manufacturing courses are given in the dairy building (Flint Laboratory), a modern building designed especially for dairy work. The building is equipped with the newest and best types of dairy and creamery machinery.

The market milk room contains two complete pasteurizing units, a clarifier, separator, milk heater, automatic bottle filler and capper, and other necessary equipment for the proper handling of market milk.

The ice cream making room contains a pasteurizing vat, homogenizer, cooler, brine and direct expansion freezers, filling machines, and additional equipment such as is found in a modern ice cream plant.

The room designed for cheese making is equipped with cheese vats, draining racks, presses, mixer, etc. The butter making room has various types of hand and power churns, workers, scales, and other accessories.

The separator room contains a collection of separators and exhibits of modern equipment and supplies for the dairyman.

The testing laboratories are well equipped with apparatus for the Babcock, Mojonnier, and other tests used for the determination of fat, acidity, and general cleanliness of milk and milk products.

Dairy Manufactures

First Year

First Semester

Agricultural Engineering S1 (Farm Motors)
Animal Husbandry S1 (Types and Breeds)
Bacteriology S1 (Bacteriology and Rural Hygiene)
Business Law S1
Dairy S1 (General Dairying)
Soils and Crops S1 (Soil Management)
Agricultural Opportunities S1 (Required of women students)
Hygiene S-1 (Required of women students)
*Physical Education S1
Student Health S3 (Hygiene—required of men students)
Tractor Practice
Milking, Harnessing and Teaming

Electives

*Physical Education S1 is required of men students not participating in football; also required of women students.

Second Semester

(Eight Weeks Resident Instruction Followed by Six Months Placement Training)
Animal Husbandry S2 (Principles of Feeding)
Bacteriology S2 (Continuation of Bacteriology S1)
Dairy S2 (Testing Milk Products)
Business English S2
Horticultural Manufactures S4
Soils and Crops S2 (Fertilizers)
Physical Education S2 (Required of women students)

Electives

Home Economics S-2 (Problems in Personal and Home Living)
Physical Education S4 (Basketball and Hockey)

Second Year

First Semester

Agricultural Economics S1 (Farm Economic Problems)
Business Management S3
Dairy S3 (Butter and Ice Cream Making)
Rural Sociology S1 (Social and Economic Problems)
Veterinary Science S1 (Animal Sanitary Science)
Physical Education S5 (Required of men students not participating in football)

Electives

Physical Education S3 (For women)

Second Semester

Agricultural Economics S2 (Marketing)
Agricultural Engineering S6 (Dairy Mechanics)
Bacteriology S4 (Dairy Bacteriology)
Dairy S4 (Market Milk, Cheese, and Concentrated Milk Products)

Electives

Physical Education S4 (For women)
Physical Education S4 (Basketball and Hockey)
Physical Education S6 (Baseball)
Public Speaking S-4

Dairy S-1. (General Dairying) I.

This course takes up the question of the importance of dairying in the United States, and especially in the New England States, giving the development of dairying from the earliest to the present time. It covers the secretion, composition, and properties of milk; reasons for variation in the per cent of fat in different samples of milk; the Babcock test for fat in milk and other dairy products; other common milk tests; the advantage of testing

herds, Herd Improvement Associations, advanced registry work; the handling of market milk; soft cheese making, ice cream making, and butter making as applied to general farm conditions. The laboratory work consists in testing milk and dairy products for butter fat, solids, and acidity, together with some dairy plant experience in milk handling, butter making, cheese making, and ice cream making.

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Dairy S-2. (Testing Milk Products) II.

In this course a study is made of the common tests used in dairy manufacturing processes.

The lectures in this course include a discussion of the application of tests, what they indicate and their importance in the dairy plant.

The laboratory work consists of a study of the various dairy laboratory tests such as sediment, flavor, and total solids of milk; moisture fat and salt determination in butter; moisture test of cheese; the operation of the Mojonnier tester and the modified Babcock tests for fat in dairy products.

In addition to the testing work students will be required to arrange for work about the plant in order to become familiar with dairy plant practices and the operation of dairy machinery.

1 class hour and 2 2-hour laboratory periods a week. Credit, 3.

Dairy S-3. (Butter and Ice Cream Making) I.

This course deals with butter making and ice cream making. In that part of the course on butter making, the principal factors studied are: methods of separating milk, the history, selection, care and use of separators; the pasteurization and ripening of cream; testing cream for acidity; the making and use of starters; a study of churns and churning; modern methods of making butter; marketing butter; tests for moisture, salt, fat, and curd content of butter.

In that part of the course on ice cream making, a careful study is made of modern methods of manufacturing the common frozen dairy products (ice cream, sherbets, and ices, also frozen puddings, punches, mousses, etc.).

The lecture work includes a discussion of the history of ice cream making, the ingredients found in ice cream, methods of preparing and standardizing mixes, the freezing process, methods of hardening, marketing, and distribution of the finished product.

The laboratory work involves the preparation and standardization of ice cream mixes, the freezing of ice cream and other frozen dairy products, and laboratory tests for butter fat and total solids in ice cream.

3 class hours and 3 3-hour laboratory periods a week. Credit, 8.

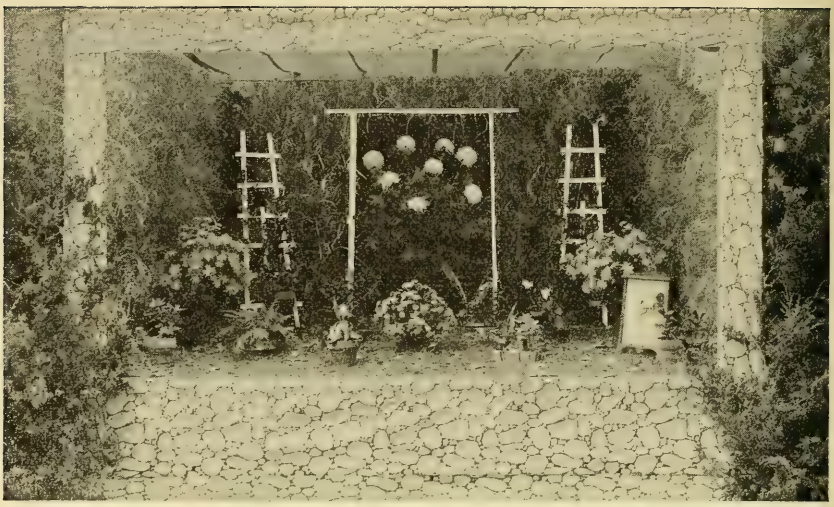
Dairy S-4. (Market Milk, Cheese, and other Milk Products) II.

In this course the different types of cheese are studied. In lectures and laboratory practice the manufacture of hard and soft cheese (cheddar, olive, nut, neufchatel, cream, cottage, etc.) is considered either from the standpoint of marketing the entire milk supply of the dairy through these products or of the economic disposal of surplus milk.

Lectures are given covering the manufacture of the various concentrated products as sweetened condensed, evaporated, and powdered milk.

Under market milk, a study of the development of the market milk industry is made. Attention is given to the necessary essentials in producing a high grade milk; the economics of milk production; food value and uses; the advantages of cooperative milk producers' organizations; the various methods of marketing milk; the transportation, processing and delivery of milk; manufacture and marketing of surplus milk in the form of by-products as cream, cultured buttermilk, chocolate milk, etc.

The laboratory work consists of receiving and making quality tests on milk and the operation of the machinery used in processing market milk.



Student Exhibit at College Horticultural Show

Field Study of Tillage Implements

In addition, trips to dairy farms and a one-day trip, with estimated cost of $5.00, will be made to city milk plants.

3 class hours and 3 3-hour laboratory periods a week. Credit, 8.

Dairy S-6. (General Course for Poultry Majors) II.

This course takes up the importance of dairying in the United States, and especially in the New England States.

Lectures will be given on secretion, composition, and properties of milk, reasons for variation in per cent of butter fat in different samples of milk. The Babcock test for fat in milk, cream, skim milk and buttermilk, the advantages of testing herds, herd improvement associations, advanced registry work; the handling of market milk, soft cheese making, ice cream making, and butter making, as applied to general farm conditions.

The laboratory work consists mainly in testing milk and dairy products for butter fat, solids, and acidity, together with some laboratory work in milk handling, butter making, cheese making, and ice cream making.

2 class hours and 2 2-hour laboratory periods a week. Credit, 4.

Note: — Every student in this course must qualify in tractor practice, milking, harnessing, and teaming, single and double. Arrangements for practice periods and examinations by special assignment. No student will be put in placement training who has not satisfied these preliminary requirements.

POULTRY HUSBANDRY

Eight courses are offered by this department. One is a general course designed particularly to equip the student with fundamental principles underlying successful poultry raising as related especially to the farm flock. The other seven courses are for the student who desires to specialize in poultry culture.

There is a broad field of opportunity for adequately trained men in the commercial handling and sale of poultry and poultry products, specialists in incubation, brooding and rearing, and assistants or managers of commercial poultry farms. Good profits and wages await well-equipped men and women in these and other branches of poultry work.

This department is well equipped to offer practical instruction in poultry husbandry. Our quarters and equipment in Stockbridge Hall provide ample facilities for efficient classroom and laboratory teaching.

Our practical laboratory (college poultry plant) comprises about 1,500 adult birds, divided into some 40 pens of various designs, the flocks ranging in size from 10 to 250 birds; several lamp incubators, as well as five mammoth machines; brooding and rearing facilities for 5,000 chicks, including many styles of coal and electric brooders and chick batteries, also two types of cages for laying hens; facilities for practice in breeding, feeding, fattening, killing, picking, caponizing, judging, mixing rations; construction of poultry houses and appliances, etc.

In addition to the actual practice work performed, the student has an opportunity to keep under observation practical experiments and demonstrations continually under way for the instruction of students and practical poultry keepers.

Poultry Husbandry

First Year

First Semester

Bacteriology S1 (Bacteriology and Rural Hygiene)
Business Law S1
Poultry Husbandry S1 (Judging and Housing)
Poultry Husbandry S3 (Feeding)
Soils and Crops S1 (Soil management)
Agricultural Opportunities S1 (Required of women students)
Hygiene S1 (Required of women students)
*Physical Education S1
Student Health S3 (Hygiene—required of men students)
Tractor Practice
Milking, Harnessing and Teaming

Electives

*Physical Education S1 is required of men students not participating in football; also required of women students.

Second Semester

(Four Weeks Resident Instruction Followed by Six Months Placement Training)
Dairy S6 (General Course)
Business English S2
Poultry Husbandry S2 (Incubation and Brooding)
Poultry Husbandry S4 (Practice Work)
Physical Education S2 (Required of women students)

Electives

Home Economics S-2 (Problems in Personal and Home Living)
Physical Education S4 (Basketball and Hockey)

Second Year

First Semester

Agricultural Economics S1 (Farm Economic Problems)
Agricultural Engineering S3 (Farm Shop)
Fruit Growing S9 (General Course)
Poultry Husbandry S5 (Marketing and Disease Control)
Poultry Husbandry S7 (Breeding)
Veterinary Science S1 (Animal Sanitary Science)
Physical Education S5 (Required of men students not participating in football)

Electives

Physical Education S3 (For women)

Second Semester

Agricultural Economics S2 (Marketing)
Agricultural Engineering S2 (Farm Motors)
Agricultural Engineering S8 (Farm Structures)
Farm Management S2 (Farm Management and Accounts)
Poultry Husbandry S8 (Management and Specialties)
Rural Sociology S4 (Social and Economic Problems)

Electives

Physical Education S4 (For women)
Physical Education S4 (Basketball and Hockey)
Physical Education S6 (Baseball)
Public Speaking S-4

Poultry Husbandry S-1. (Judging and Housing) I.

This course embraces a study of the various economically important types and breeds of domestic fowl, judging for egg production capacity, and for exhibition quality. A visit to Storrs egg laying contest is required. This course also covers the principles and practices of constructing and equipping houses on a commercial poultry farm. A few trips to nearby poultry plants will be taken to study poultry house ventilation. Two hours for judging; two hours for housing.

2 class hours and 2 2-hour laboratory periods a week Credit, 4.

Poultry Husbandry S-2. (Incubating and Brooding) II.

A study of incubation and brooding is made by means of the operation of standard incubators and brooders and through a consideration of basic principles. Students select and grade hatching eggs and operate small and mammoth incubators for a period of time. Under supervision each student has charge of a brood of chicks.

The incubation part of the course will consist of three class hours, one laboratory period and one practice period, and will run parallel to the brooding part which will consist of two class hours, one laboratory period and one practice hour.

5 class hours; 2 2-hour laboratory periods and the equivalent of 2 2-hour laboratory periods in incubation and brooding practice. (7 days a week.) Credit, 9.

Poultry Husbandry S-3. (Feeding) I.

A study of the common poultry feeds, feeding principles and successful commercial farm practices. Suitable rations for specific purposes are calculated.

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Poultry S-4. (Practice Work) II.

Practice work in candling, packing eggs, killing, pedigreeing, shipping chicks and other similar seasonal jobs is required. Skill in each task will have to be acquired for credit in this course.

The equivalent of 2 2-hour laboratory periods a week. Credit, 2.

Poultry Husbandry S-5. (Marketing and Disease Control) I.

This course covers candling and grading eggs, market classification of poultry and eggs, judging eggs, fattening, killing, picking, drawing and judging of live and dressed market poultry. This course also aims to acquaint the student with the normal hygienic conditions under which our domestic poultry thrive best. Sufficient anatomy and physiology will be given to enable the student to distinguish between normal and abnormal conditions. The nature of disinfectants and external and internal antiseptics will be stressed, and the students made acquainted with the best usages both scientific and practical in conducting a sanitary program for disease prevention and control. A special effort will be made to link the sanitary hygienic and disease control problems with the so-called down-to-date practices in feeding, housing and general management. Two hours for marketing; two hours for disease control.

2 class hours and 2 2-hour laboratory periods a week. Credit, 4.

Poultry Husbandry S-7. (Breeding) I.

This course includes the study of the improvement of poultry by means of mass selection, "seed-plot" and pedigree methods of breeding. Students follow through each step of a pedigree hatch and assist in the selection of the breeders used at the college plant. Basic principles of heredity necessary for an understanding of good breeding practices are studied. A visit to Genetics Laboratory at Storrs, Connecticut, is required.

3 class hours and 1 2-hour laboratory period a week. Credit, 4.

Poultry Husbandry S-8. (Management and Specialties) II.

In this course the following points are given special attention: lines upon which a well-organized poultry farm is developed, the general arrangement of plots and buildings, record keeping, accounting and advertising, and a study of surveys. A trip covering three or more days will be made to representative successful poultry farms. The expense per student is approximately $15–$20. This is required of each student taking the course for credit. One hour's credit will be devoted to the specialties, such as turkeys, ducks, etc.

3 class hours and the equivalent of 1 2-hour laboratory period a week. Credit, 4.

Poultry Husbandry S-10. (General Poultry Husbandry) II.

Poultry keeping as a national industry; its importance and geographical distribution; opportunities and possibilities in poultry culture in Massachusetts; principles of feeding; utility classification of fowl; incubation; the production of hatching eggs; the baby chick industry; and brooding and rearing. Practical exercises will be closely correlated with the study of breeds and varieties, various types of incubators, brooders, brooder-houses, etc. "Practical Poultry Management" by Rice and Botsford will be used as a text.

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Note. — Students who take course 10 must get permission from the Poultry Department to take advanced poultry courses.

Note. — Every student in this course must qualify in tractor practice, milking, harnessing, and teaming, single and double. Arrangements for practice periods and examinations by special assignment. No student will be put in placement training who has not satisfied these preliminary requirements.

FLORICULTURE

Students who complete the course in Floriculture are fitted primarily for work in commercial and private estate greenhouse establishments and retail flower stores. After gaining experience such students may be able to start in business for themselves. With the courses in general horticulture they should also be qualified for positions on private estates, in parks, or in nurseries.

The offices and class rooms of the Department of Floriculture are located in French Hall. Of the two lecture rooms, one will accommodate 40 students, the other 90 students; a laboratory, equipped with slate-covered tables, will accommodate 40 students. In the basement of the building the department has a specially prepared room for bulb storage, a fertilizer and tool room, and a large room for general storage purposes.

The glass area of the department consists of approximately 20,000 square feet, divided as follows: French Hall, range of 7,200 square feet, a durable, practical commercial range, composed of palm and fern, sweet pea, carnation, rose and students' houses; the old Durfee range of 7,400 square feet, devoted to the growing of decorative, conservatory and bedding plants, and chrysanthemums; one house of 3,200 square feet suitable for propagating work and general plant culture; and approximately 2,200 square feet in cold frames and hotbeds.

In addition the department has land for summer culture of carnations, gladioli, dahlias, annuals and bedding plants, a perennial garden, an iris garden, and a rose garden.

Floriculture

First Year

First Semester

Business Law S1
Floriculture S1 (Garden Materials)
Floriculture S3 (Greenhouse Construction and Heating)
Horticulture S1 (Plant Materials)
Soils and Crops S1 (Soil Management)
Vegetable Gardening S1 (Principles of Vegetable Culture)
Agricultural Opportunities S1 (Required of women students)
Hygiene S-1 (Required of women students)
*Physical Education S1
Student Health S3 (Hygiene—required of men students)
Power lawn mower practice
Tractor Practice
Teaming and Harnessing

Electives

*Physical Education S1 is required of men students not participating in football; also required of women students.

Second Semester

(Eight Weeks Resident Instruction Followed by Six Months Placement Training)
Business English S2
Entomology S2 (Insects of Ornamental Trees and Shrubs)
Floriculture S2 (Greenhouse Management and Propagation)
Forestry S2 (The Elements of Forestry)
Horticulture S2 (Propagation of Plant Materials)
Soils and Crops S2 (Fertilizers)
Vegetable Gardening S2 (Principles of Vegetable Culture)
Physical Education S2 (Required of women students)

Electives

Home Economics S-2 (Problems in Personal and Home Living)
Physical Education S4 (Basketball and Hockey)

Second Year

First Semester

Agricultural Engineering S3 (Farm Shop)
Business Management S1 (Fundamentals of Business Management)
Floriculture S5 (Commercial Production)
Floriculture S7 (Flower Arrangement)
Fruit Growing S9 (General Course)
Horticulture S-7 (Care of Plant Materials)
Physical Education S5 (Required of men students not participating in football)

Electives

Physical Education S3 (For women)

Second Semester

Floriculture S6 (Commercial Production)
Floriculture S8 (The Uses of Herbaceous Plants)
Floriculture S10 (Conservatory Plants)
Horticulture S6 (Plant Materials)
Vegetable Gardening S4 (Vegetable Forcing)

Electives

Physical Education S4 (For women)
Physical Education S4 (Basketball and Hockey)
Physical Education S6 (Baseball)
Public Speaking S-4

Floriculture S-1. (Garden Materials) I.

This course is intended for students who will take up private estate work or who will specialize in floriculture. It will include a study of the annuals,

biennials, herbaceous perennials, and bedding plants which are commonly used in commercial floriculture and in private estate work. Methods of propagation, culture and uses will be considered. Laboratory exercises will include work in propagation, planting, study of materials, and planning of beds and borders.

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Floriculture S-2. (Greenhouse Management and Propagation) II.

A study of the principles of greenhouse management including the consideration of soils, fertilizers, watering, ventilation, temperature regulation, insect and disease control. The methods of propagation of florists' crops will be taken up in detail.

3 class hours and 1 2-hour laboratory period a week. Credit, 4.

Floriculture S-3. (Greenhouse Construction and Heating) I.

This course will take up the origin, growth, and importance of the floriculture industry, development of the greenhouse, types of houses and construction, and methods of greenhouse heating. Trips are taken to visit greenhouse establishments in the vicinity of Amherst.

1 class hour and 1 2-hour laboratory period a week. Credit, 2.

Floriculture S-5. (Commercial Production) I.

Courses S-5 and S-6 will be devoted to a consideration of the important commercial crops. Special attention will be given to the culture (under glass) of roses, carnations, chrysanthemums, violets, and sweet peas. Other cutflower crops and various potted plants will also be considered. All members of the class are required to take a one-day trip to visit a large commercial greenhouse establishment at an approximate cost of five dollars each. Textbooks required during the two courses will be: Holmes, "Commercial Rose Culture"; and Smith, "Chrysanthemum Manual."

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Floriculture S-6. (Commercial Production) II.

A continuation of Floriculture S-5.

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Floriculture S-7. (Flower Arrangement) I.

A study of the principles underlying the use of flowers in funeral designs and sprays, table decorations, corsages, vase, bowl and basket arrangements; decorations for public functions; study of color with regard to such work. Limited to students who are majoring in floriculture. Textbooks: White, "Principles of Flower Arrangement"; Harry, "Manual of Floral Designing."

1 class hour and 2 2-hour laboratory periods a week. Credit, 3.

Floriculture S-8. (The Uses of Herbaceous Plants) II.

This course is a continuation of Floriculture S-1 and is intended for students specializing in floriculture and general horticulture. It provides opportunity for a more detailed study of many of the plants considered in the preceding course with special emphasis on their uses in gardens and in other types of landscape planting. Lectures, assigned readings, study and identification of plants, planning of borders and gardens. All members of the class are required to take a one-day trip to visit nurseries and perennial gardens at an approximate cost of five dollars each.

2 class hours and 1 4-hour laboratory period a week. Credit, 4.

At Work in the College Nursery

Practice in Pest Control in College Orchards

Floriculture S-10. (Conservatory Plants) II.

A study of the plants, both foliage and flowering, which are used in conservatories and in decorative work. Methods of propagation, culture, uses and identification of plants will be included in the course. Trips are taken to visit the conservatories at Smith and Mount Holyoke colleges.

1 class hour and 1 2-hour laboratory period a week. Credit, 2.

Note. — Every student must qualify in tractor practice; and in harnessing and teaming, single and double. Arrangements for practice periods and examinations by special assignment. No student will be put on placement training who has not satisfied these preliminary requirements.

Practice in operating power lawn mower equipment will be required of all men students.

FRUIT GROWING

This course is arranged to give the student a sound practical knowledge of fruit growing and allied subjects. Graduates who are capable and experienced have advanced rapidly to positions of responsibility in some of the larger orchards of New England, and the demand is active for good men in that field.

Some graduates of this course have gone into business for themselves, establishing successful orchards of their own, or pruning, spraying and otherwise caring for a number of small orchards, the owners of which are not prepared to do their own work. Still others are packing house foremen or are engaged in some other marketing activity. The fruit-growing industry of New England is an important one and there are opportunities for good men who are well trained.

Practical work in the orchards under expert supervision is emphasized where possible. It is intended to familiarize students with the best methods that have been devised by experiment stations and leading fruit growers for the production and marketing of high-quality fruits under New England conditions. The Department of Pomology has about fifty acres of fruits easily accessible from the classroom, and the orchards are used freely for purposes of instruction. All the common tree fruits and small fruits are grown here on a commercial scale. Many experiments and demonstrations are in progress in the plantations, offering an exceptional opportunity to the student.

The Department also has a thoroughly up-to-date storage and packing house, in which are several types of refrigerated and common storage rooms, fruit sizing machines, and other modern equipment.

A good equipment is maintained of the principal types of orchard tools and machines, including sprayers, plows, harrows, cultivators, tractor, pruning saws, shears, etc., for study and trial by students.

Fruit Growing

First Year

First Semester

Business Law S1
Floriculture S1 (Garden Materials)
Fruit Growing S1 (Growing Tree Fruits)
Fruit Growing S3 (Varieties)
Soils and Crops S1 (Soil Management)
Vegetable Gardening S1 (Principles of Vegetable Culture)
Agricultural Opportunities S1 (Required of women students)
Hygiene S-1 (Required of women students)
*Physical Education S1
Student Health S3 (Hygiene—required of men students)
Tractor Practice
Teaming and Harnessing

Electives

*Physical Education S1 is required of men students not participating in football; also required of women students.

Second Semester

(Eight Weeks Resident Instruction Followed by Six Months Placement Training)
Agricultural Engineering S2 (Farm Motors)
Agricultural Engineering S10 (Repair of Farm Equipment)
Business English S2
Fruit Growing S2 (Orchard and Vineyard Pruning)
Rural Sociology S2 (Social and Economic Problems)
Soils and Crops S2 (Fertilizers)
Physical Education S2 (Required of women students)

Electives

Home Economics S-2 (Problems in Personal and Home Living)
Physical Education S4 (Basketball and Hockey)

Second Year

First Semester

Agricultural Economics S1 (Farm Economic Problems)
Agricultural Engineering S9 (Drainage and Farm Structures)
Beekeeping S1 (Fall Management, Wintering and Honey Marketing)
Forestry S3 (Estate Forestry and Woodland Management)
Fruit Growing S5 (Harvesting, Packing, Storage and Marketing)
Fruit Growing S7 (Small Fruits)
Horticultural Manufactures S1
Physical Education S5 (Required of men students not participating in football)

Electives

Physical Education S3 (For women)

Second Semester

Agricultural Economics S2 (Marketing)
Beekeeping S2 (Spring Management, Pollination and Honey Production)
Farm Management S2 (Farm Management and Accounts)
Fruit Growing S4 (Fruit Pests and Spraying)
Fruit Growing S6 (Problems in Orchard Management)
Horticultural Manufactures S2
OR
Poultry S10 (General Course)
Vegetable Gardening S8 (Commercial Vegetable Culture)

Electives

Physical Education S4 (For women)
Physical Education S4 (Basketball and Hockey)
Physical Education S6 (Baseball)
Public Speaking S-4

Fruit Growing S-1. (Growing Tree Fruits) I.

This course covers the field of orchard planting and development, and the management of bearing plantations to produce fruit of high quality. Sites and soils for plantations of apples, pears, peaches, plums, and cherries are discussed along with the best methods of setting trees to insure a good start. The handling of young trees to bring them into early profitable bearing is given special attention.

The culture of bearing orchards is studied in detail to give an understanding of the factors that influence yield and quality of fruit. Methods of soil management are discussed with reference to their advantages and limitations. The experimental plots afford exceptional opportunities to study cultural methods and many subjects are discussed in the orchards.

3 class hours a week. Credit, 3.

Fruit Growing S-2. (Orchard and Vineyard Pruning) II.

Fruit plantations may be damaged more by unintelligent pruning than by mismanagement in any other single operation. If the orchardist does not know that apple trees bear on spurs, he is likely to cut them off in pruning, and so reduce his chances for a crop. If he is ignorant of the fact that the peach bears on last year's wood, he may remove most of this wood, and incidentally most of his crop. This course aims to give the student a thorough training in the theory of pruning and the methods of bearing of the different fruits.

At the same time, every student is required to prune in the college orchards and vineyards until he becomes reasonably proficient with each kind of fruit.

1 class hour and 2 2-hour laboratory periods a week. Credit, 3.

Fruit Growing S-3. (Varieties) I.

It is the aim of this course to acquaint the student with the more important varieties of our common fruits, and their value in the commercial orchard. The selection of fruit for exhibition and the judging of the same will also be taken up.

2 2-hour laboratory periods a week. Credit, 2.

Fruit Growing S-4. (Fruit Pests and Spraying) II.

Before praying can be done intelligently, the fruit grower must have an understanding of the life histories of the principal pests for which the spraying is done. This course deals with the development of insect and disease pests, and particular attention is given to the vulnerable points in their life cycles at which control measures are directed.

This course also deals with many of the principal spray materials and each student is given practice in their preparation for use and application in the orchard.

The department is well equipped with modern spraying apparatus, from bucket pumps to large power outfits, and students are required to study the construction of these pumps and to operate them in the orchards.

Spraying is very properly regarded as one of the most important operations in connection with fruit growing, and it is the aim of this course to train students to recognize the work of our common orchard pests; to prepare the proper materials for their control, and to apply them efficiently.

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Fruit Growing S-5. (Harvesting, Packing, Storage, and Marketing) I.

Profitable returns from a well-grown crop depends largely upon the manner of handling that crop from the time it leaves the trees until it reaches the market.

This course considers the methods of harvesting which will insure the maximum storage quality of the fruit. Particular attention is given to the grading of the crop and subsequent packing into the various packages that are commonly used for conveying the fruit to market.

The principles of common and refrigerated storage are considered in detail and storage house construction under New England conditions is discussed, with a critical examination of several storages in use on or near the campus.

Marketing methods as related to the shipping of fruit to distant markets as well as those employed in the development of local markets are given special consideration in this course.

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Fruit Growing S-6. (Problems in Orchard Management) II.

This course provides an opportunity to focus placement training experiences and information acquired in previous courses on the major problems of the New England fruit grower, and to check up on any questions on which the student feels that he still lacks information. It is the aim of the course to familiarize the student with conditions under which fruit must be grown here, with current thought on the more important recent developments, and with the sweeping adjustments which are being made in the fruit industry of the Northeastern States.

Each major student must be prepared to take a trip to some of the prominent fruit farms of the State. This will involve some expense.

3 class hours a week. Credit, 3.

Fruit Growing S-7. (Small Fruits) I.

While orcharding will always be the leading phase of fruit growing in Massachusetts, there are many unusual opportunities for success in growing the various small fruits. This course deals with problems of establishing and handling successfully, plantations of strawberries, raspberries, blackberries, currants, and grapes.

The college has large plantations of most of these fruits, so the student has ample opportunity for a wide range of practical work. The aim is to make the course of the utmost practical value, as well as to give the scientific principles on which practices are based.

2 class hours a week. Credit, 2.

Fruit Growing S-9. (General Course) I.

This course is intended to meet the needs of students in other majors who cannot devote more than one semester to the subject of Fruit Growing. It deals with the practical side of growing and marketing fruits. Special attention is given to such questions as selection of sites, choice of varieties, grafting, spraying, pruning, soil management, harvesting, packing and marketing. (Floriculture, Horticulture, and Poultry Majors.)

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Fruit Growing S-10. (General Course) II.

This course is a repetition of Fruit Growing S9 primarily for the benefit of first year students who are specializing in Animal Husbandry.

4 class hours and 1 2-hour laboratory period a week. Credit, 5.

Note. — Every student in this course must qualify in tractor practice, milking, harnessing, and teaming, single and double. Arrangements for practice periods and examinations by special assignment. No student will be put in placement training who has not satisfied these preliminary requirements.

GENERAL HORTICULTURE

The constantly increasing interest in development of grounds, both public and private, for use and enjoyment, has created a demand for men trained to handle the varied problems in the construction and maintenance of these grounds. The course in General Horticulture aims to make the student familiar with these various problems.

Men who have taken this course are to be found in such different fields as foremen in nurseries, or proprietors of nurseries which they themselves have built up; superintendents on private estates, cemeteries, parks, and various public and private institution grounds; foremen for landscape construction firms, and some have developed their own business in landscape construction and grounds maintenance service.

With the whole campus as a laboratory, the student finds problems about him every day comparable to those he will meet when he goes out to work. The broad lawns, the walks and drives, the gardens, the greenhouses, the orchards, the vegetable plots, as well as the farms, supply all the various phases of work which will be encountered on estates, in parks, or in institution grounds. As far as practicable the student is given the opportunity to determine what these problems are and to solve them himself under expert supervision.

On the campus is to be found a large and excellent collection of mature trees, shrubs, and vines. From these plants the student is able to build up a background of plant knowledge; in identification; in propagation which is carried on in a special greenhouse for the purpose; in the handling of plants in various stages of their growth, in the nursery and on the campus; and in their ultimate care, pruning and protection against injuries of all kinds. Construction of roads, walks, drainage and other problems involving the moving of earth are especially valuable to those looking forward to landscape construction.

The courses in forestry are designed to give practical instruction in the elements of forest care and management with special reference to the problems that will be faced by one who is given the responsibility of managing farm or estate woodland. The necessary phases of forest measurement, silviculture and forest protection are included. Field work, carried out on the college forest of 755 acres at Mt. Toby, takes the form of demonstrations and practical field problems in forest care and management. Students in these courses work to a considerable extend under actual field conditions.

Special equipment must be purchased by all senior students majoring in Horticulture. This includes drawing board, T square, triangles, and drafting set. Through arrangements with the College Store this equipment is available at a price of $6.50 per set. Each student must secure his own set.

Horticulture

First Year

First Semester

Business Law S1
Floriculture S1 (Garden Materials)
Horticulture S1 (Plant Materials)
Soils and Crops S1 (Soil Management)
Soils and Crops S5 (Construction and Maintenance of Fine Turf Areas)
Vegetable Gardening S1 (Principles of Vegetable Culture)
Agricultural Opportunities S1 (Required of women students)
Hygiene S-1 (Required of women students)
*Physical Education S1
Student Health S3 (Hygiene—required of men students)
Power Lawn Mower Practice
Tractor Practice
Teaming and Harnessing

Electives

*Physical Education S1 is required of men students not participating in football; also required of women students.

Second Semester

(Eight Weeks Resident Instruction Followed by Six Months Placement Training)
Botany S2 (Diseases of Trees and Shrubs)
Entomology S2 (Insects of Ornamental Trees and Shrubs)
Forestry S2 (The Elements of Forestry)
Horticulture S2 (Propagation of Plant Materials)
Rural Sociology S2 (Social and Economic Problems)
Soils and Crops S2 (Fertilizers)
Vegetable Gardening S2 (Principles of Vegetable Culture)
Physical Education S2 (Required of women students)

Electives

Home Economics S-2 (Problems in Personal and Home Living)
Physical Education S4 (Basketball and Hockey)

Second Year

First Semester

Agricultural Engineering S3 (Farm Shop)
Business English S1
Forestry S3 (Forest Measurement and Management)
Fruit Growing S9 (General Course)
Horticulture S3 (Principles of Plane Surveying and Mapping)
Horticulture S7 (Care of Plant Materials)
*Horticulture S9 (Professional Landscape Management)
Physical Education S5 (Required of men students not participating in football)

Electives

Physical Education S3 (For women)
*Forestry S4 substituted for Horticulture S9 which is not offered in 1936–37.

Second Semester

Agricultural Engineering S2 (Farm Motors)
Floriculture S8 (The Uses of Herbaceous Plants)
*Forestry S4 (The Care and Cultivation of the Forest)
Horticulture S4 (Plan Making and Surveying)
Horticulture S6 (Plant Materials)

Electives

Physical Education S4 (For women)
Physical Education S4 (Basketball and Hockey)
Physical Education S6 (Baseball)
Public Speaking S-4

Horticulture S-1. (Plant Materials) I.

Study of evergreen and deciduous trees, their distinguishing characters, value in landscape work and culture, with special reference to nursery and planting practice.

1 class hour and 2 2-hour laboratory periods a week. Credit, 3.

Horticulture S-2. (Propagation of Plant Materials) II.

This course will present the principles of plant propagation with special reference to their application to plant materials in nursery practice.

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Horticulture S-3. (Principles of Plane Surveying and Mapping) I.

This course consists of outdoor practice in the use of simple surveying instruments as tapes, compasses, and levels used in the measurement of land surfaces. Practice will be given in elementary drafting and in the study of contour maps, grading plans, house lots and garden problems.

1 class hour and 2 2-hour laboratory periods a week. Credit, 3.

Horticulture S-4. (Plan Making and Surveying) II.

This is a continuation of Horticulture S3 including the staking out of areas from plans, grading work, and simple garden construction problems.

1 class hour and 2 2-hour laboratory periods a week. Credit, 3.

Horticulture S-6. (Plant Materials) II.

A continuation of Horticulture S1, studying shrubs and woody vines used in ornamental plantings.

1 class hour and 2 2-hour laboratory periods a week. Credit, 3.

Horticulture S-7. (Care of Plant Materials) I.

This course deals with the care of woody ornamental plants under the following heads: planting, pruning, maintenance of soil fertility, winter protection, and pest control.

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Horticulture S-9. (Professional Landscape Management) I.

A course that includes those essential factors for successful landscape management that cannot be taught in courses pertaining to the specific phases of landscape construction and maintenance. It includes the analysis of problems; cultural evaluation of landscape areas; the making of professional reports; the keeping and analysis of cost records; direction and distribution of labor; and similar topics to cause the student to be informed concerning the managerial problem of superintendent or landscape contractor

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Excursion. — For Horticulture S-6, a two-day field trip will be required. Estimated cost, $10.00.

Note. — Every student must qualify in tractor practice; and in harnessing and teaming, single and double. Arrangements for practice periods and examinations by special assignment. No student will be put on placement training who has not satisfied these preliminary requirements.

Practice in operating power lawn mower equipment will be required of all men students.

VEGETABLE GARDENING

Students who complete the course in Vegetable Gardening are fitted to go into commercial work as greenhouse vegetable growers, market gardeners, truck farmers and seed growers. Responsible positions are also open as gardeners on private estates, state and private institutions, as assistants with seed concerns and with retail and wholesale marketing companies.

The vegetable industry is an important vocation in New England and the opportunities are excellent in the various phases of the business for good men or women who are well trained. The Department of Vegetable Gardening is well equipped to give thorough training in that ample class and laboratory rooms are available plus 3,500 square feet of modern greenhouse space and approximately 500 linear feet of hot and cold frames. More than 10 acres of land is also utilized in the production of vegetable crops on a commercial and demonstrational basis including a variety trial plot in which more than 1,000 varieties are grown annually. Equipment of the most modern type is maintained for study and use. The office, class and laboratory rooms are located in French Hall.

Vegetable Gardening

First Year

First Semester

Agricultural Engineering S1 (Farm Motors)
Floriculture S1 (Garden Materials)
Floriculture S3 (Greenhouse Construction and Heating)
Fruit Growing S1 (Growing Tree Fruits)
Soils and Crops S1 (Soil Management)
Vegetable Gardening S1 (Principles of Vegetable Culture)
Agricultural Opportunities S1 (Required of women students)
Hygiene S-1 (Required of women students)
*Physical Education S1
Student Health S3 (Hygiene—required of men students)
Tractor Practice
Teaming and Harnessing

Second Semester

(Eight Weeks Resident Instruction Followed by Six Months Placement Training)
Floriculture S2 (Greenhouse Management and Propagation)
Fruit Growing S2 (Orchard and Vineyard Pruning)
Soils and Crops S2 (Fertilizers)
Vegetable Gardening S2 (Principles of Vegetable Culture)
Vegetable Gardening S6 (Diseases, Insects and Their Control)
Physical Education S2 (Required of women students)

Electives

*Physical Education S1 is required of men students not participating in football; also required of women students.

Electives

Home Economics S-2 (Problems in Personal and Home Living)
Physical Education S4 (Basketball and Hockey)

Second Year

First Semester

Agricultural Engineering S9 (Drainage and Farm Structures)
Beekeeping S1 (Fall Management, Wintering, and Honey Marketing)
Business Law S1
Fruit Growing S7 (Small Fruits)
Horticultural Manufactures S1
Vegetable Gardening S3 (Systematic Vegetable Gardening)
Physical Education S5 (Required of men students not participating in football)

Second Semester

Agricultural Economics S2 (Marketing)
Beekeeping S2 (Spring Management, Pollination, and Honey Production)
Farm Management S2 (Farm Management and Accounts)
Fruit Growing S4 (Fruit Pests and Spraying)
Horticultural Manufactures S2
OR
Poultry S-10 (General Course)
Vegetable Gardening S4 (Vegetable Forcing)
Vegetable Gardening S8 (Commercial Vegetable Culture)

Electives

Physical Education S3 (for women)

Electives

Physical Education S4 (For women)
Physical Education S4 (Basketball and Hockey)
Physical Education S6 (Baseball)
Public Speaking S-4

Vegetable Gardening S-1. (Principles of Vegetable Culture) I.

Lecture periods are devoted to discussions covering certain fundamental principles of plant structure and growth as they influence and regulate commercial vegetable culture. The work in the laboratory includes detailed studies in seedage, plant growing, manures and fertilizers, garden planting, pests, storage and marketing.

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Vegetable Gardening S-2. (Principles of Vegetable Culture) II.

Lectures are devoted to discussion of the more important factors of soil and climate which regulate plant growth and reproduction. The laboratory studies are planned in such a manner that the factors discussed in lecture are definitely applied to specific vegetable or horticultural crop plants.

3 class hours and 1 2-hour laboratory period a week. Credit, 4.

Vegetable Gardening S-3. (Systematic Vegetable Gardening) I.

This course is designed to acquaint the student with the identification, nomenclature and classification of the standard types and varieties of vegetables; judging and exhibiting; seed production and variety improvement work.

1 class hour and 2 2-hour laboratory periods a week. Credit, 3.

Vegetable Gardening S-4. (Vegetable Forcing) II.

A study of (1) the geographical distribution of the greenhouse industry and the part this phase of vegetable production plays in supplying our mar-

kets with fresh vegetables, (2) the principles of culture, harvesting and marketing of those vegetables commonly grown as commercial crops under glass, (3) growing early plants in frames and plant houses for home and retail purposes.

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Vegetable Gardening S-6. (Diseases, Insects and Their Control) II.

This course is intended to give those students majoring in vegetable gardening an understanding of the more common insects and diseases which attack vegetable plants and the most satisfactory methods for controlling these pests.

2 class hours and 2 2-hour laboratory periods a week. Credit, 4.

Vegetable Gardening S-8. (Commercial Vegetable Culture) II.

Commercial problems and practices are studied in detail including seedage, planting, tools and machinery, nutrition, harvesting, marketing and management. Organized trips to market gardening sections are required covering a period of approximately three days and costing the individual student about fifteen dollars.

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Note. — Every student in this course must qualify in tractor practice, milking, harnessing, and teaming, single and double. Arrangements for practice periods and examinations by special assignment. No student will be put in placement training who has not satisfied these preliminary requirements.

WILDLIFE MANAGEMENT

Increased interest in the recreational use of our land areas opens a broad field in the Management of Wildlife. The dovetailing of a game crop into farming and forestry creates a need for the services of the vocationally trained man with the right enthusiasm for wildlife and its conservation.

Men who take this course are required to pursue studies in agriculture, forestry, zoology, and allied subjects. Familiarity with forest and stream, the agriculture of the region, and the intermingling wildlife is gained by practical field work on Mt. Toby Forest, a demonstrational and research area of 755 acres owned by the College, and on surrounding areas.

Although the course of study offered is primarily vocational, students must develop a technical mind. A natural bent for scientific investigation is quite as important as enthusiasm. In vocational work of this nature covering such a broad field and utilizing so many economic forces, one must be trained not only to observe but to reason as well. The work is interesting to those qualified to pursue it, but calls for students who are mentally alert and capable of maintaining a high standard of work. Only this type of man is desired and will be accepted.

Men who take this course should aim to qualify themselves for positions as game wardens, estate and club managers, or as field men engaged in various phases of wildlife work in state parks and national forests. There are a number of fields such as game farming, fur farming, etc., open to the private operator. The economic development of wildlife is essential in the multiple use of our land areas whether privately or publicly owned.

This course will be limited at present to ten students. Because of limited size of class, all entrance applications will be carefully examined by a special faculty committee and, in case of any question on information supplied, applicants may be requested to report in person for interview.

Wildlife Management

First Year

First Semester

Agriculture S1 (Soil Management)
Breeding and Propagation S5
Forestry S5 (Animal Identification)
Forestry S7 (Analysis of Forest Areas)
Forestry S9 (Wildlife Food Plants)
*Physical Education S1
Student Health S3 (Hygiene—required of men students)
Tractor Practice

Second Semester

Breeding and Propagation S6
Ecology S2
Forestry S6 (Field Practice)
Forestry S8 (Forest Measurement and Mapping)

Electives

*Physical Education is required of men students not participating in football.

Elective

Physical Education S4 (Basketball and Hockey)

Second Year

First Semester

Agricultural Engineering S3 (Farm Shop)
Forestry S27 (Silviculture)
Forestry S29 (Field Problems)
General Biology S21
Law and Administrative Principles S25
Physical Education S5 (Required of men students not participating in football)

Second Semester

Agricultural Engineering S2 (Farm Motors)
Diseases and Predators S26
Fish Culture S24
Forestry S28 (Forest Use and Management)
Forestry S30 (Special Problems)

Electives

Physical Education S4 (Basketball and Hockey)
Physical Education S6 (Baseball)
Public Speaking S4

Agriculture S-1. (Soil Management) I.

A course in the relation of the soil to natural cover and to the production of cultivated plants. Soil management as regards moisture control, tillage, organic matter and acidity will be studied.

The laboratory work will include training in the use and interpretation of the maps of the U. S. Soil Survey, and in testing soil for texture, organic matter and acidity.

Students will be required to make a study of some suitable area, and report on the soil conditions as related to wildlife management.

2 class hours and 1 3-hour laboratory period a week. Credit, 3.

Breeding and Propagation S-5. I.

Anatomical and physiological relationships, age, sex and vigor determinations in birds; breeding principles and practices, housing and shelter principles and practices, feeding principles and practices, management of mature stock.

3 class hours and 1 2-hour laboratory period a week. Credit, 4.

Breeding and Propagation S-6 II.

A study of the basic principles of successful incubation, brooding and rearing. Students will select hatching eggs, regulate and operate small and mammoth incubators, regulate and operate various types of brooders with chicks.

2 class hours and 2 2-hour laboratory periods a week. Credit, 4.

Diseases and Predators S26. II.

In order to conserve animal life a knowledge of the causes and the nature of death is necessary. The general scope of this course includes health disturbances and mortality in game animals due to disease producing agents and predators; also, the mechanism of the disease process and mode of death, along with corrective measures which will conserve animal health and life.

3 class hours a week. Credit, 3.

Ecology S-2. II.

Stresses the importance of physical factors, temperature, humidity, light, air currents, etc., to living things. Includes methods of measuring and evaluating these factors where game is concerned. (Elementary physical geography, meteorology.)

2 class hours and 1 4-hour laboratory period a week. Credit, 4.

Fish Culture S-24. II.

A course designed to set forth the principles of fish culture for both stream and pond species. Methods of propagation, equipment and its use, water requirements, nutritional requirements and feeding methods, and distribution problems will be considered.

2 class hours and 1 4-hour laboratory period a week. Credit, 4.

Forestry S-5. (Animal Identification) I.

Identification of the principal species of the fauna of North America including the use of keys and a study of the life history including breeding habits and food and cover requirements. Includes the reading of signs indicating animal abundance under natural conditions.

2 class hours and 2 2-hour laboratory periods a week. Credit, 4.

Forestry S-6. (Field Practice) II.

A discussion of the various field procedures for the determination of values of lakes, streams and forests for wildlife production. Field work includes surveys of areas for food and cover and the writing of reports based on field inspection for the management of wild land.

2 class hours and 1 4-hour laboratory period a week. Credit, 4.

Forestry S-7. (Analysis of Forest Areas) I.

This course is designed to prepare the student to properly analyze a forest stand. Lecture periods are devoted to a study of site factors and their relation to forest types. Field work consists of the determination of boundaries, areas, types, and tree volumes by species.

2 class hours and 1 4-hour laboratory period a week. Credit, 4.

Forestry S-8. (Forest Measurement and Mapping) II.

Application of the several methods of forest measurement. Students must become proficient in the calculation of yields of forest products. The student is required to map an assigned area showing physiographic features, silvicultural data, and timber factors.

2 class hours and 1 4-hour laboratory period a week. Credit, 4.

Forestry S-9. (Wildlife Food Plants) I.

Knowledge of forest plants that produce food materials valuable in maintaining game birds and mammals is essential to every student of Wildlife Management.

This course is designed to familiarize the student with such vegetation, both native and introduced species. Stress is laid upon systematic identification of the material and upon game food values.

2 2-hour laboratory periods a week. Credit, 2.

Forestry S-27. (Silviculture) I.

Silvicultural systems used to secure natural forest reproduction and intermediate cuttings for cultural improvement as applicable in the Northeast. Field practice in the marking of trees for removal in the above cuttings. Forest protection. Artificial reproduction of food and shelter species.

2 class hours and 1 4-hour laboratory period a week. Credit, 4

Forestry S-28. (Forest Use and Management) II.

Building and maintenance of forest improvements. Forest working plans and regulations. Surveys and reports of forest areas covering forest valuation. Methods of harvesting, silvicultural application and financial returns.

2 class hours and 1 4-hour laboratory period a week. Credit, 4.

Forestry S-29. (Field Problems) I.

Problems provide the opportunity to develop a project in a field of work of interest to the student. These problems will involve field and laboratory work and will require a critical examination of the literature on the subject chosen. Problems may be chosen from a list of subjects provided, including those pertaining to the life history or management of fish, upland game, fur bearers, or non-game animals.

Conference, field and library work. Credit, 3.

Forestry S-30. (Special Problems) II.

A continuation of Forestry S-29. The second semester will be used to summarize the field data and to complete the report.

Conference, field and library work. Credit, 3.

General Biology S-21. I.

A course designed to bring together the threads of biological knowledge previously acquired. Deals with the principles of animal organization, physiology, development, and adaptation. Disease-producing organisms and other harmful animals are stressed, and a review of the types of the principal phyla is included.

2 class hours and 2 2-hour laboratory periods a week. Credit, 4.

Law and Administrative Principles S-25. I.

This course will consist of a series of lectures on the following subjects:

Contracts and land laws including explanations of abstracts and deeds.
5 lectures Mr. Smart.

Principles of accounting including the relationships of costs, overhead and profits. 5 lectures Professor Barrett.

State and Federal Laws relating to conservation.
5 lectures State Conservation Department.

Lectures scheduled by arrangement. Credit, 1.

RELATED SUBJECTS IN OTHER DEPARTMENTS

Instruction in agricultural economics is given with a view toward presenting the business side, or economics of agriculture. The required course is divided into two parts given in separate semesters. The approximate division of subject matter for each semester is indicated below.

Agricultural Economics S-1. (Farm Economic Problems) I.

The purpose of this course is to introduce students to the more important economic problems facing New England farmers. Increasing competition with other farm sections, long-time movements of farm prices and farm profits, farm credit, farm taxation, tariffs and other farm relief measures are some of the problems to be considered.

(See requirement for marketing trip below.)

2 class hours a week. Credit, 2.

Agricultural Economics S-2. (Marketing) II.

This course deals largely with economic problems arising out of marketing farm products. Particular attention is given to marketing methods used in New England and to the comparison of local methods with methods used by farmers in competing sections. Principles and methods of co-operative marketing used by successful co-operative associations are studied in detail in order to show how New England farmers may meet competition from associations in other sections, either as individual producers or as officers or members of local associations.

A two-day marketing trip to Boston or New York is required of all students in order to study at first hand the methods of handling products on the wholesale markets. This trip may be required in either semester.

2 class hours a week. Credit, 2.

Agricultural Engineering S-1 and S-2. (Farm Motors) I. II.

This course is a study of the principles of the gasoline engine and its accessories, as used in trucks, automobiles, tractors, and stationary work. Instruction is given in the laboratory by lectures, demonstrations, and exercises. Shop experience is given by overhauling machines brought in for repair. This course also deals with the application of electricity to agriculture including electric wiring.

3 2-hour laboratory periods a week. Credit, 3.

Agricultural Engineering S-3 and S-4. (Farm Shop) I. II.

This course gives instruction in the care and use of carpenters' tools through bench work, repair of farm equipment, and building construction. Practice in building forms, mixing and placing concrete, framing, cutting rafters, etc., make up this portion of the subject. Instruction in forging, pipe fitting, soldering, and the use of machinists' tools for the repair of farm machinery and miscellaneous farm equipment, together with a study of pumps and water supply systems make up the other portion of the work.

3 2-hour laboratory periods a week. Credit, 3.

Agricultural Engineering S-5. (Farm Engineering) I.

The principles underlying the practice of farm drainage are discussed. Instruction is given in the use of the engineer's level for the purpose of laying out and grading tile drainage ditches. In addition, practice is given in forging, pipe fitting, soldering, and use of machinists' tools which will help in the repair of farm machines and miscellaneous farm equipment. Part of the course is given over to the study of field implements and power-driver machines. A study of various types of pumps and water supply systems is also included.

1 class hour and 2 2-hour laboratory periods a week. Credit, 3.

Agricultural Engineering S-6. (Dairy Mechanics) II.

This course is planned for men who are fitting themselves to take charge of dairy plants or allied lines of work. It includes a study of steam boilers, pumps, steam traps, water filters and softeners, belting, electric motors, milking machines, and refrigeration plants.

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Agricultural Engineering S-7 and S-8. (Farm Structures) I. II.

A study of the building materials commonly used in farm construction; details of construction and simple structural mechanics; the principles of design of such farm buildings as the dairy stable, hog house, horse barn, general purpose barn, poultry house, fruit and vegetable storage buildings is made. Each student will have opportunity to design in detail one of the major farm buildings in which he is particularly interested.

1 class hour and 2 2-hour laboratory periods a week. Credit, 3.

Agricultural Engineering S-9. (Drainage and Farm Structures) I.

This course is for Vegetable Gardening and Fruit Growing majors and will involve the study of underlying principles of drainage. Practice will be given in the use of the engineer's level for the purpose of laying out and grading tile drainage ditches. In the study of Farm Structures the materials, details of construction, simple structural mechanics, and principles of design of types of buildings suitable to the vegetable gardener will be made. Each student will design in detail one of the major buildings in his field.

1 class hour and 2 2-hour laboratory periods a week. Credit, 3.

Agricultural Engineering S-10. (Repair of Farm Equipment) II.

Instruction is given in forging, pipe fitting, soldering, and the use of machinists' tools for the repair of farm machinery and miscellaneous farm equipment, together with a study of pumps and water systems. (Fruit Growing majors.)

3 2-hour laboratory periods a week. Credit, 3.

Agricultural Opportunities for Women S-1. I.

A study of problems of vocational adjustments and of opportunities for women in agriculture and related fields.

1 class hour a week. Credit, 1.

Bacteriology S-1. (Bacteriology and Rural Hygiene) I.

The reproduction, structure, growth, changes produced by the action of bacteria upon various substances and the methods by which disease producing bacteria of man and animals are disseminated will be studied. The proper use of disinfectants, vaccines and serums in the control and treatment of disease will be discussed. The purpose of the course is to present the problems of applied bacteriology in health, agriculture and industry. The sanitary production, handling and distribution of milk involving human and environmental contacts with a food often consumed raw is an important problem to be controlled by responsible citizens of the community. Discussions on milk include the various sources of milk infections, methods of controlling sanitary production and marketing and the detection and elimination of milk dangerous to the public health. Water supplies are of especial importance to man. The construction of wells, cisterns, etc., will be briefly considered and the application of sanitary measures to prevent and control their pollution will be discussed. The proper treatment and disposal of private and municipal sewage presents a problem of no small importance Work has been planned in this course to present some of the problems pertaining to the sanitary production and distribution of foods; special attention will be given to the bacteriology of food preservation.

This course is designed to acquaint the student with the nature and importance of micro-organisms and thus better explain biological changes in nature and susceptibility to disease. (Animal Husbandry, Poultry and Dairy Manufactures majors.)

3 class hours a week. Credit, 3.

Bacteriology S-2. (Bacteriology and Rural Hygiene) II.

This course is a continuation of Bacteriology S-1 for Animal Husbandry and Dairy Manufactures majors.

3 class hours a week. Credit, 3.

Bacteriology S-4. (Dairy Bacteriology) II.

Bacteria and other micro-organisms are the responsible agents for changes which occur in milk, and for the contagion which sometimes causes diseases. They are found in milk at times when leaving the udder, they get in with the dust and dirt while milking and they adhere to the dairy utensils which carry them over from one milking to the next. From the cow to the consumer there is the constant presence of these micro-organisms to contend with, on the one hand, and to foster on the other.

Many of these changes occurring in milk are undesirable, such as ropy milk, sour milk, bitter milk, tainted milk, etc. Many of these changes are encouraged as the ripening of cream for butter, of milk for cheese, of milks for milk drinks. The former are fought, the latter fostered.

Micro-organisms of typhoid fever, scarlet fever, diphtheria and other diseases find their way by means of milk to the consumer and produce epidemic forms of these diseases.

Much time is spent in making plate counts and interpreting results. The different bacteriological tests are studied, such as Breed and Methylene Blue. The proper use of these methods will quickly enable one to locate the source of trouble and check any further continuance.

It is evident, therefore, that to handle milk and milk products safely it is desirable to know something of the agents which are the source of so much attention in the dairy. This indicates the nature of the substance of this course. This course is required of all students who elect dairying as one of their special lines of work.

3 3-hour laboratory periods a week. Credit, 5.

Beekeeping S-1. (Fall Management, Wintering, and Honey Marketing) I.

The students are given an opportunity for individual handling of bees in the early fall, and field studies are made of the bee colony and its organization. Studies and practice in fall feeding are followed by a similar treatment of winter protection and the bees are then prepared for winter. During the latter part of the semester the surplus honey is extracted and prepared for market, a laboratory study made of the product and, finally, the commoner bee diseases are discussed and methods of control pointed out.

1 class hour and 1 2-hour laboratory period a week. Credit, 2.

Beekeeping S-2. (Spring Management, Pollination, and Honey Production) II.

The first part of the semester is occupied in assembling and studying the equipment used in beekeeping, but as soon as the weather permits, work is

resumed on the bees in the apiary. Studies are made in spring management; pollination in the apple orchards is particularly stressed, and attention is then turned to the preparation of the colonies for honey production.

Throughout the entire course, wherever possible, the work is made practical and individual, enough theory being given so that the student will understand the reasons for his manipulations.

1 class hour and 1 2-hour laboratory period a week. Credit, 2.

Botany S-2. (Diseases of Trees and Shrubs) II.

This course is planned for students majoring in Horticulture. Topics presented follow: (1) Concept of a fungus and bacterium. (2) Parasitism. (3) Type specimen of tree diseases; heartrot, saprot, barkrot. (4) Woodrots. (5) Bud, leaf, flower, and fruit blights. (6) Root and vascular parasites. (7) Non-parasitic diseases. With each type, closely allied forms are also presented together with the general methods for control. The types are taught objectively and definite periods set aside for oral quizzing.

1 class hour and 1 2-hour laboratory period a week. Credit, 2.

Business English S-1 and S-2. I. II.

To consist of personal or business letters, or writing of a similar nature, and an oral presentation (a five-minute address or talk on an assigned topic to be prepared for each week, and as many heard as time permits).

2 class hours a week and a 2-hour outside assignment. Credit, 2.

Business Law S-1. I.

Required for freshmen. To consist of a particular study of the contract drawing, reading and interpretation with specific problem work. Commercial paper, torts, equity and personal rights presented by lectures during the course. Particular stress is placed on the reasoning process.

3 class hours a week. Credit, 3.

Business Management S-1. I.

This course is designed primarily for students majoring in Floriculture. It involves a study of records and accounts used by florists; costs and prices; uses of capital and credit; house and store management; advertising; buying and selling; economic use of labor and equipment; general business trends as affecting the flower business; how the florist should make adjustments to meet economic changes; analyses of going concerns; and finally a bringing together of all the information studied and applying it to the successful organization of a business. The entire course is to be made as applicable and practical as possible.

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Business Management S-3. I.

This course is designed primarily for students majoring in Dairy Manufactures. The principles of business organization and management are considered in relation to the successful operation of a dairy plant. The course includes a study of the following: various records and accounts used by dairies; costs and prices; uses of capital and credit; economic trends as affecting the business; how to make adjustments in the business to meet economic changes; analyses of different types of going concerns; and finally a bringing together of all the information studied and applying it to the successful organization of a business.

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Entomology S-2. (Insects of Ornamental Trees and Shrubs) II.

A course designed to acquaint the student with the major pests injurious to ornamental trees and shrubs. Life histories of the insects concerned, the

types of injury, and methods of control will be studied throughout the course. Recognition of the major pests will be attained by a study of mounted specimens and by a study of the insects collected by the students in the class.

2 class hours a week. Credit, 2.

Farm Management S-1 and S-2. (Farm Management and Accounts) I. II.

The work in this course involves a study of farm records and accounts; costs and prices of farm products; uses of capital and credit; types of farming, selection of crop and live stock enterprises; size, diversity and production as related to the successful farm business; farm layout and arrangement; economic use of labor, power and equipment; detailed analysis of both successful and unsuccessful farms, how the farmer should make adjustments to meet economic changes; and finally, a bringing together of the information gained and applying it to the successful organization of a farm business.

Actual farm records are used to illustrate the above points. The entire course is made as applicable and practical as possible.

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Note. — Farm Management will be given both semesters. The first semester will be for students majoring in Animal Husbandry; the second semester for students majoring in Poultry Raising, Fruit Growing and Vegetable Gardening.

Forestry S-2 (The Elements of Forestry) II.

A course designed to give the student an introduction to the practice of forestry in New England with especial reference to its application on the forested portions of farms and estates. The place of forestry in land management; the natural history and composition of the forest; the several objectives of forest management; methods of forest cultivation and improvement.

3 class hours a week. Credit, 3.

Forestry S-3 (Forest Measurement and Management) I.

A course designed to give the student a working knowledge of the methods employed in determining the volume of the forest-growing stock and its value; to develop an understanding of the natural history of the forest and to emphasize the fact that when a forest is skillfully managed it will yield its numerous products and benefits as annual or periodic crops. The principles of forest management underlying sustained yield are emphasized.

The field work in applied forestry is conducted on the Mt. Toby Forest.

1 class hour and 1 4-hour field period a week. Credit, 3.

Forestry S-4 (The Care and Cultivation of the Forest) II.

This course logically follows Forestry S-3 and is designed to teach the basic principles of forest production. The several classes of intermediate cuttings are systematically taught and demonstrated in the field. The natural reproduction methods are studied as well as basic work in seeding and planting as applied to forestry. Special attention is given to the principles involved in marking timber for removal and to the science of forest protection

Field work in applied forestry is given on the college forest at Mt. Toby.

1 class hour and 1 4-hour field period a week. Credit, 3.

Home Economics S-1. (Food Selection) I.

This course is a study of the nutritional needs of persons of different ages and activity and the choice of foods to meet these needs. Consideration will also be given to food problems related to the experiences of one living away from home as well as to basic principles in the preparation and serving of simple meals. (Not offered in 1936–37.)

1 class hour a week. Credit, 1.

Home Economics S-2. (Problems in Personal and Home Living) II.

This is a study of some of the problems in everyday living which must be considered intelligently if one is to become a useful member of society. (Offered in 1936–37.)

3 class hours a week. Credit, 3.

Horticultural Manufactures S-1. I.

This course is designed for the students interested in food preservation, either as a business or for homemaking. The work covers the theories and practices of preserving fruits, vegetables and fruit products, together with the study of freezing and dehydration of foods.

Economy of manufacture is stressed. The student is required to keep an accurate record of costs and manufacturing operations.

1 class hour and 2 2-hour laboratory periods a week. Credit, 3.

Horticultural Manufactures S-2. II.

This is a continuation of Horticultural Manufactures S-1 and covers the study of manufacturing miscellaneous products. The work includes the manufacture of confections for both homemaker and small commercial producer, pickles and pickle products, maple products, citrus fruit products and the canning of meats, poultry and spring fruits and vegetables.

1 class hour and 2 2-hour laboratory periods a week. Credit, 3.

Horticultural Manufactures S-4. II.

The class and laboratory exercises in this course are planned to meet the needs of students majoring in Dairy Manufactures. General principles of food preservation and their application to the subject of dairying will be discussed in class exercises. Methods of preserving fruits and fruit products and judging and testing of commercial packs will be studied in the laboratory.

1 class hour and 2 2-hour laboratory periods a week. Credit, 3.

Public Speaking S-4. II.

Required of seniors interested in dramatic presentation and elective for the rest. This course is a continuation of the freshman course; but lays particular stress on the drama and dramatic presentation and public speaking. (All Dramatic presentation endeavored by the Two-Year Course, or other short courses to be under the direction of the instructor in Business English.)

2 class hours a week. Credit, 2.

Rural Sociology S-1,S-2 and S-4. (Social and Economic Problems) I. II.

A study of the individual and his relationships and conflicts in society, particular note to be taken of rural society and its problems. Indivdual topics assigned, papers prepared and discussed in class. Rural religion, 4-H Club work, extension service and experiment station work and their significance in the farm problem presented by specialists in their field.

3 class hours a week. Credit, 3.

Soils and Crops S-1. (Soil Management) I.

Every agricultural interest is vitally concerned with the soil, its adaptations and its management for plant production. This course treats of the selection of suitable soils for the special purposes of agriculture, horticulture and floriculture.

Laboratory includes training in the use and interpretation of the maps of the U. S. Soil Survey and in tests of soil texture, organic matter and soil acidity. Practical field work will be given in judging the crop adaptation and value of soils, and field demonstration of the use of tillage tools on the college farm.

As a field project the student will be required to make a study of some farm, nursery or florist's plant, from the standpoint of soil conditions and methods of soil management in relation to the enterprise as a whole.

2 class hours and 1 3-hour laboratory period a week. Credit, 3.

Soils and Crops S-2. (Fertilizers) II.

This course deals with the origin, manufacture, purchase and use of commercial fertilizer materials. A study will be made of the interpretation of fertilizer formula, analysis and guarantee. Special attention will be given to the newer concentrated fertilizer materials and to those produced from atmospheric nitrogen. The laboratory work will give practice in the identification of fertilizer materials, in the calculation of fertilizer formulas, and in the preparation of fertilizer mixtures.

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Soils and Crops S-4. (Field Crops) II.

The lecture hours of this course will be devoted to presentation and discussion of the most successful methods of fertilizing, cultivating, harvesting, and storing the field crops grown in New England. Special attention will be given to the choice of the best adapted varieties for the production of hay, pasture, corn, potatoes, and root crops.

The laboratory work will include the study of corn and potato varieties, identification of grass and weed species, and studies of purity and germination. Field observation of growing crops will be included as the season permits.

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Soils and Crops S-5. (Construction and Maintenance of Fine Turf Areas) I.

At the completion of this course the student should have a knowledge and appreciation of the requirements for the growing of lawns and sports turf. He will have considered the construction of turf areas; seed identification, selection and sowing; the identification of turf grasses and their soil and fertilizer preferences, correct cultural practices, turf diseases and pests and their control.

1 class hour and 2 2-hour laboratory periods a week. Credit, 3.

Veterinary Science S-1. (Animal Sanitary Science) I.

Conservation of the health of animals is the keystone of successful animal husbandry. This course acquaints students with the essentials upon which the health of animals depends. In order that students may later guard the animals in their charge, attention is given to conditions favoring communicable and non-communicable diseases, and to prophylactic measures.

3 class hours a week. Credit, 3.

Veterinary Science S-2. (Applied Animal Sanitary Science) II.

For Animal Husbandry major students. A continuation of S-1. The more common diseases of cattle, horses, sheep, and swine will be studied. Causes; development; emergency; control; eradication; and prophylactic measures will be emphasized.

3 class hours a week. Credit, 3.

Farm Practice.

Individual tests are given all students as indicated in the various course programs in both milking and harnessing and teaming. The students are graded either very good, good, satisfactory or unsatisfactory. Those who have not had sufficient experience to satisfactorily pass these tests are required to take additional practice by appointment with the Farm Super-

intendent. Not more than two students are scheduled each day for practice in milking under the supervision of the herdsman, and those not satisfactorily passing the teaming test are scheduled for individual work with the teamsters on the College Farm. Those who pass the test as satisfactory, but who wish additional practice may do so by appointment. The opportunity is available for any who wish to secure additional skill in farm operations such as plowing, harrowing, etc.

This assignment in developing necessary farm skills is an important part of the vocational training program of each course during the fall semester of the first year and a complete report on each student's skill and ability is submitted to the Short Course Office and to the Director of Placement Service, who has charge of locating all placement jobs. Students failing to pass these tests satisfactorily inevitably limit themselves from securing the better placement positions.

PHYSICAL EDUCATION

Women

This program aims at an all-round development of the student. It gives the student activity adapted to her needs; assists in overcoming remediable physical defects and bad health habits; it encourages good health standards, helps her build up skill in sports and games and swimming and leaves her with possibilities for spending leisure time wisely.

Required Courses

Physical Education S-1. I.

Outdoor season—field hockey, soccer, games, special gymnastics, swimming.

Indoor season—basketball, folk dancing, games, special gymnastics, swimming, volley ball.

2 class hours a week. Credit, 2.

Physical Education S-2. II.

Indoor season—badminton, basketball, clog, and tap dancing, special gymnastics, indoor baseball, swimming, volley ball.

Outdoor season—archery, baseball, special gymnastics, tennis, swimming.

2 class hours a week. Credit, 2.

Hygiene S-1 I. (For Freshmen)

Lectures on personal hygiene, including the physiological basis for sound health habits, the importance of the systematic planning of a student's daily program in order to provide the proper amounts of time for study, with suitable periods of sleep, relaxation, recreation, and sports; posture, appropriate types of exercise, proper nutrition, social adjustment, the necessity for frequent medical, optical, and dental advice; sanitation and group health requirements.

1 class hour a week. Credit, 1.

Elective Courses

Physical Education S-3 and S-4. I. II. (For Seniors)

The senior program is arranged to give the student an opportunity to express her desire for wholesome physical recreation, to further develop desirable character traits and social qualities and qualities of leadership.

2 class hours a week. Credit, 2.

Men

Required Courses

Physical Education S-1. I. (Recreation.—For freshmen. Outdoor games.)

The following outdoor games are taken up: Soft ball, touch football, soccer, golf, and swimming. Men may elect football or cross-country. The course aims to give every man the opportunity to develop sufficient control over his body to enable him to get pleasure from physical activities and to establish correct health habits.

2 laboratory hours a week for first half semester. Credit, 1.

Physical Education S-5. I. (Recreation.—For seniors. Outdoor games.)

Includes the games of badminton, volley ball, archery and swimming, with the object of giving the men a fund of exercise material for use in after school days. Men may elect football or cross-country.

2 laboratory hours a week for first half semester. Credit, 1.

Student Health S-3. I. (Hygiene.—For freshmen.)

Lectures on personal hygiene including the physiological basis for sound health habits, the importance of the systematic planning of a student's daily program in order to provide the proper amounts of time for study with suitable periods of sleep, relaxation, recreation and sports; posture, appropriate types of exercises, proper nutrition, social adjustment, the necessity for frequent medical, optical and dental advice, sanitation and group health requirements.

1 class hour a week. Credit, 1.

Elective Courses

Physical Education S-4. II. (Recreation.—For freshmen and seniors.)

(Basketball, Hockey, Indoor Track, Boxing and Wrestling.) January–March.

Students electing this course must be regular members of the basketball, hockey, or indoor track squads and report regularly for practice with those squads. Boxing and wrestling men report on scheduled days. Credit, 1.

Physical Education S-6. II. (Recreation.—For seniors. Baseball.)

Students electing this course will be divided into teams which will play an intramural schedule. These men must report regularly for practice and games whenever scheduled. Credit, 1.

DIRECTORY OF INFORMATION

A. The College.

Those desiring college catalogs, the President's annual report, and other pamphlets giving full information relative to entrance requirements, courses of study, expenses, opportunities for student labor, and so forth, should address Robert A. Hawley, Secretary, Amherst, Mass.

All questions regarding admission to the college, either to the freshman class or to advanced standing, should be addressed to William L. Machmer, Dean of the College, Amherst, Mass.

B. The Graduate School.

Questions relating to courses offered leading to the degrees of Master of Science and Doctor of Philosophy, admission and work required, should be addressed to Fred J. Sievers, Director of the Graduate School, Amherst, Mass.

C. Short Courses.

For information concerning the Short Course Units, the Stockbridge School of Agriculture, the College Summer School, write or apply to Roland H. Verbeck, Director of Short Courses, Amherst, Mass.

APPLICATION FOR ENROLLMENT IN THE STOCKBRIDGE SCHOOL OF AGRICULTURE

Name.....Date.....
City or
Town.....Street.....State.....

Present Occupation.....Age.....

School or College Attended:

Name of School.....Number of Years in High School:.....

Place.....

Indicate by a check mark the course in which you desire to register. Do not check more than one.

1. Animal Husbandry
2. Dairy Manufactures
3. Poultry Husbandry
4. Fruit Growing
5. Floriculture
6. Vegetable Gardening
7. General Horticulture
8. Wildlife Management

References.—I am personally acquainted with the above applicant, and know .....to be of good moral character, industrious, studious, and physically capable.

1. Name.....Position.....

Address.....

2. Name.....Position.....

Address.....

(Two references are required, and should not be members of your own family. Your minister and your teacher, or a former employer, are desirable. These persons should sign the application themselves.)

Mail this blank to ROLAND H. VERBECK, *Director of Short Courses*
MASSACHUSETTS STATE COLLEGE, AMHERST, MASS.

Important:—Be sure to file citizenship certificate if State tuition rate is claimed.

SHORT COURSES AT THE MASSACHUSETTS STATE COLLEGE

Short courses are based on the idea that the motive which inspires study is the most significant factor in study itself, and that this motive rises when the student himself realizes he faces a problem that calls for a solution. Therefore there is no age limit. Enrolled in short courses are found the young and the old, the experienced and the inexperienced, the theoretical and the practical. In this grouping there is a value, since students learn from each other as well as from the instructors. Practically all Short Course students intend to make a direct application of the knowledge given. Hence the aim of Short Course work is to offer the largest amount of information and training in agricultural and horticultural lines in the shortest possible time. During the past twenty years Short Courses have served hundreds of students in this Commonwealth, and the demand for these courses in recent years has steadily continued.

Tenative Dates for Short Courses

The following courses or group programs will be offered in 1936–1937, but are subject to changes as may be necessary.

Nine Weeks' Course in Poultry Raising—Unit 1 (November 16–25; November 30–December 8.) Unit 2 (December 9–18; January 4–8.) Unit 3 (January 11–29.)

Ten Weeks' Course in Greenkeeping. January 4–March 15

Ten Day Course in Dairy Bacteriology. (January 4–16.)

Five Day Course in Milk and Cream Testing; Analyzing and Inspecting Milk Products. (January 18–23.)

Five Day Course in Milk Plant Operation and Manufacture of Surplus Milk Products. (January 25–30.)

Five Day Course in Ice Cream Making for beginners. (February 1–6.)

Five Day Course in Ice Cream Making for experienced students. (February 8–13.)

Five Day Course for Tree Wardens and Town Foresters. (March 22–27.)

For catalog of any of the schools, write

Director of Short Courses, M. S. C., Amherst, Mass.

Certificate of Citizenship

The Massachusetts State College charges a tuition fee of $110 a semester to students who are not residents of Massachusetts. In order to satisfy the college authorities that an applicant is entitled to state tuition of $50 per semester, they require a statement signed by the clerk of the city or town in which the applicant resides, certifying to the fact that the parent or guardian of the applicant is a legal resident of said city or town. Such a statement may be made on the form below. If this is not presented when the student registers the Treasurer has no option but to collect tuition on the above basis.

This is to certify that I am the father.....mother.....guardian.....

of .....
Student's Name

Signed.....

This is to certify that on the date specified below

.....is a legal resident of.....
Above Signee

....., Massachusetts.
Town or City

Signed.....
Town or City Clerk

Date.....
Seal

Mail this blank to ROLAND H. VERBECK, *Director of Short Courses*

MASSACHUSETTS STATE COLLEGE, AMHERST, MASS.

This certificate must be filed with application blank if lower tuition rate for citizens of Massachusetts is to be secured.

ANNOUNCEMENT

OF

WINTER SHORT COURSES

AT

Massachusetts State College

The Winter Short Courses at Massachusetts State College are arranged primarily for the convenience of men and women engaged in the agricultural industry who wish to use the opportunity afforded by the winter season for study and practice under professional supervision. The courses are arranged in units of varying duration from the five-day courses in dairying to the eleven-weeks' course in greenkeeping. All courses are described on the following pages.

The college reserves, for itself and its departments, the right to withdraw or change the announcements made in its catalogue or in any of its official publications.

STATE COLLEGE BULLETIN

Amherst, Massachusetts

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OFFICERS OF GENERAL COLLEGE ADMINISTRATION

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Dean of the College

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Librarian of the College

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Director of Short Courses

The Faculty of Instruction for Winter Short Courses

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Assistant Professor of Poultry Husbandry

WILLIAM H. DAVIS, Ph.D. . . . . Botany
Assistant Professor of Botany

LAWRENCE S. DICKINSON, B.S. . . . . Agronomy
Assistant Professor of Agronomy

JULIUS H. FRANDSEN, M.S.A. . . . . Dairy Industry
Professor of Dairy Industry and Head of Department

CHRISTIAN I. GUNNESS, B.S. . . . . Agricultural Engineering
Professor of Agricultural Engineering and Head of Department

ROBERT P. HOLDSWORTH, M.F. . . . . Forestry
Professor of Forestry and Head of Department

HARRY G. LINDQUIST, M.S. . . . . Dairy Industry
Instructor in Dairying

MERRILL J. MACK, M.S. . . . . Dairy Industry
Assistant Professor of Dairying

MINER J. MARKUSON, B.S. . . . . Agricultural Engineering
Assistant Professor of Agricultural Engineering

RANSOM C. PACKARD, M.S. . . . . Bacteriology
Instructor in Bacteriology

J. HARRY RICH, B.S. . . . . Forestry
Assistant Professor of Forestry

WILLIAM C. SANCTUARY, M.S. . . . . Poultry
Professor of Poultry Husbandry

FRANK R. SHAW, B.S. . . . . Entomology
Instructor in Entomology and Beekeeping

CHARLES H THAYER . . . . . Agronomy
Instructor in Agronomy

JOHN H. VONDELL . . . . . Poultry
Instructor in Poultry Husbandry and Foreman of Poultry Plant

FRANK A. WAUGH, M.S. . . . . Landscape Architecture
Professor of Landscape Architecture and Head of Department

MASSACHUSETTS STATE COLLEGE
WINTER SHORT COURSES

The Winter School Short Courses have been maintained by the college for over twenty-five years. They meet a definite need in providing instruction for groups of men and women who can leave their regular duties during the winter months. The school closes in time for students to begin practical work in the spring.

The following courses or group programs are offered:

1. Poultry Raising—Unit 1 (Nov. 16—24: Nov. 30—Dec. 8) Unit 2 (Dec. 9—18: Jan 4—11) Unit 3 (Jan. 12—29).
2. Greenkeeping (An eleven weeks' course—(Jan. 4—March 15).

Each of these courses requires a definite number of students as a minimum if the course is to be given. Also there is a maximum limit to the size of classes, and in the greenkeeping course early application is always advisable. See explanation of limited enrolment under each course on following pages.

In addition to these longer courses there are other courses offered for shorter periods of time and less expense, as follows:

3. Dairy Bacteriology Course—Monday, January 4, 1:00 P. M. to Saturday, January 16, 12 M.
4. Milk and Cream Testing; Analyzing and Inspecting Milk Products —Monday, January 18, 1:00 P. M. to Saturday, January 23, 12 M.
5. Milk Plant Operation and Manufacture of Surplus Milk Products —Monday, January 25, 1:00 P. M. to Saturday, January 30, 12 M.
6. Ice Cream; Testing and Analyzing Ingredients Used in Ice Cream Making, the Standardizing of Mixes and Freezing—Monday, February 1, 1:00 P. M. to Saturday, February 6, 12 M.
7. Ice Cream Making for Experienced Men—Monday, February 8, 1:00 P. M. to Saturday, February 13, 12 M.

The Dairy courses are so arranged that a student may take any one or all of them if he desires.

8. Five-Day Short Course for Tree Wardens and Town Foresters—Monday, March 22, 1:00 P. M. to Saturday, March 27, 12 M.

Winter School certificates will be awarded to students who complete the full work in the courses taken, with satisfactory grades.

Entrance Requirements

No entrance requirements have been fixed other than that the student shall be at least eighteen years of age and shall have completed the elementary or common schools.

Tuition, Fees and Expenses

There is a tuition fee of $10.00 for the full Ten Weeks' Winter School Program and each student is required to pay to the Treasurer a $5.00 registration fee. There are no laboratory fees in connection with any of the courses. The registration fee and tuition fee, must be paid to the Treasurer of the college at the time of registration. There is also a health fee of $1.50 for the full term, not for the five-day or ten-day courses.

Board may be obtained at the college dining hall cafeteria service for $6.50 weekly, meal ticket plan. Rent for furnished rooms in private houses varies in price from $2.50 to $4.00 a week for each occupant.

The Short Course Office will be glad to assist students in locating rooms.

Registration at Short Course Office, South College

All Poultry students register on Monday, November 16 for the first unit of work. Registration for Greenkeepers will be held on Monday, January 4. Other short courses register on the Monday forenoon of the beginning week, with classes starting at 1:00 P. M. the same day. All fees are payable at College Treasurer's Office at time of registration.

Upon arrival the student should report at the office of the Director of Short Courses, located in South College; call Amherst 900, if telephoning.

APPLICATION FOR ENROLMENT IN THE WINTER SCHOOL SHORT COURSES

I hereby make application for admission to the following Winter Short Courses:

Date .....

Name .....

Home Address .....

Business Address .....

Age ..... Present Occupation .....

Previous Schooling .....

Check special course or courses in which you desire to register.

1. The Winter Course in Poultry Raising
   Unit 1 (Nov. 16—24: Nov. 30—Dec. 8).
   Unit 2 (Dec. 9—18: Jan. 4—11)
   Unit 3 (Jan. 12—29)
2. Ten-day course in Dairy Bacteriology (Jan. 4—16)
3. The Five Day Dairy Courses:
   (a) Milk and Cream Testing: Analyzing and Inspecting Milk Products (Jan. 18—23)
   (b) Milk Plant Operation and Manufacture of Surplus Milk Products (Jan. 25—30)
   (c) Ice Cream; Testing and Analyzing Ingredients Used in Ice Cream Making, the Stanardizing of Mixes, and Freezing (Feb. 1—6)
   (d) Ice Cream Making for Experienced Men (Feb. 8—13)
4. Five-day Short Course for Tree Wardens and Town Foresters. (Mar. 22—27)

Mail this blank to Roland H. Verbeck, Director of Short Courses, Massachusetts State College, **Amherst, Mass.**

Note:—File application blank in back of catalogue if for Greenkeeping Course.

WINTER COURSE IN POULTRY RAISING

November 16, 1936 to January 29, 1937

General Information

This nine-week short course will begin on November 16, 1936 and class work will close on January 29, 1937. Students will register at the Short Course Office on Monday, November 16, from 9:00 A. M. to 12:00 M. Classes begin at 1:00 P. M. the same day.

Thanksgiving Day recess begins on Wednesday, November 25 at 12:00 M., and continues to Monday, November 30, at 8:00 A. M. Christmas vacation extends from December 19, 12:00 M., to January 4, at 8:00 A. M.

The number of students will be limited to twenty; unless six students register the course will not be given. Applications should be sent early as students will be accepted in the order of their application. (See blank on page 4.)

Aim.—The purpose of this course is to give the students a good survey of the entire field of poultry production and cover the work as intensively as time will permit. It is designed for those who wish to follow poultry keeping as a vocation and who can spend but a short time in preparation.

Facilities.—Our large poultry plant of 1500 birds, equipped with modern incubators and brooders of various kinds, together with other adequate equipment and laboratories, will be at the service of students in carrying on their laboratory work.

The M. S. C. Poultry Club, a student organization, meets twice a month for special discussions on current topics and lectures by prominent poultrymen or specialists.

Entrance Requirements

There are no entrance examinations for admission, but students must be at least eighteen years old and have educational training through the elementary school, that is, eighth grade.

Tuition and Expenses

There is a tuition fee of $9.00 for the full course, or $3.00 for each three-week unit. A registration fee of $5.00 will be charged for the full course and a pro rata fee for a three week unit. These fees must be paid at the time of registration and need not be sent in advance.

Board can be secured at the College dining hall, cafeteria service, for $6.50 per week and rooms in private houses near the campus cost $2.50 to $4.00 a week. Textbooks will cost $5.00 to $10.00. One hundred dollars should cover all necessary expenses for the full course.

Rooms may be secured at time of registration from approved lists at Short Course Office.

CALENDAR 1936—1937

First Term	November 16—24: November 30—December 8
Second Term	December 9—18: January 4—11
Third Term	January12—January 29

SCHEDULE OF CLASSES BY TERMS 1936—1937

First Term		*Second Term*		*Third Term*	
W-1 Judging	7 hrs.	W-4 Feeding	7 hrs.	W-7 Management	7 hrs.
W-2 Marketing	7 hrs.	W-5 Incubation	7 hrs.	W-8 Brooding	7 hrs.
W-3 Housing	7 hrs.	W-6 Breeding	7 hrs.	W-9 Diseases	7 hrs.

Description of Courses

W-1. Poultry Judging.—A study of the characters effected by egg production and those that limit egg production in the individual. Trapnested birds with known records are constantly used to check the student's judgment in estimating production. This knowledge has direct applicability in the constant elimination of non-producers from the flock, and the selection of outstanding breeders.

W-2. Marketing Poultry Products.—This course covers candling and grading of eggs, market classification of poultry and eggs, judging eggs, fattening, killing, picking, drawing and judging of live and dressed poultry.

W-3. Poultry Housing.—A careful study is made of the various physical and biological factors which are involved in keeping houses comfortable, dry and hygienic. The several types of houses on the College plant furnish good practice and study material.

W-4. Poultry Feeds and Feeding.—This course embraces a study of the fundamental principles of nutrition, and their application to the problems of feeding the poultry flock—the most expensive item in the grower's budget. Feeding the growing stock, the laying flock, and fattening are all included.

W-5. Incubation.—A study of incubation principles and practices is made in conjunction with the incubators in the well-equipped cellar at the College plant.

W-6. Poultry Breeding.—The course combines in class and laboratory genetic theory and breeding applications. The various methods of selection are studied. Birds at the College are mated. The vital data about each breeder is recorded and studied in an up-to-date system of pedigree record keeping.

W-7. Poultry Farm Management.—The modern trends of commercial poultry farm organization are studied by the survey method. Each student will prepare detailed plans for a farm he now owns or might hope to develop in the future. These plans will emphasize and correlate the work in breeding, incubation, brooding, growing, market egg and meat production, marketing and accounting.

W-8. Brooding.—Brooding, as one of the most important phases of the poultry industry, is taught with the aid of modern equipment such as coal burning and electric brooders, and several kinds of battery brooders.

W-9. Disease Prevention.—Embraced in this course are studies of normal and pathological anatomy; sanitary programs of disease control; and the use of disinfectants, vermifuges and remedies of known efficacy.

This course is so organized that a student may take any term or combination of terms that he wishes, completing the course in succeeding years if it is found necessary.

WINTER COURSE FOR GREENKEEPERS

January 4 to March 15, 1937

A specialized course for men engaged in the profession of greenkeeping, or members of green committees. The courses are so arranged that all the factors of successful turf management are discussed individually and particularly in their relation to one another. The subjects as outlined can be effectively studied during the winter months.

General Requirements

An applicant for this school must be either a member of the green committee, a greenkeeper, or must have had experience on a golf course, and the application blank must be countersigned by the greenkeeper and chairman of the green committee.

No entrance examinations are required, but it is expected that the student will have a reasonable education in the English language.

The number of students is limited.

The college reserves the right to reject any applicant obviously unqualified for the work, or to dismiss any student for misconduct, or failure to properly meet the requirements of the course.

The winter school certificate will be given only to those who complete the full course with credit.

Registration January 4. Classes begin January 5.

Courses Offered

Course	*Weekly Periods*		*Length of Course*
Landscape Appreciation		1 Lecture	Full Term
Botany	1 Laboratory,	2 Lectures	Full Term
Entomology		1 Lecture	Full Term
Water Systems	2 Laboratories,	3 Lectures	Five Weeks
Drainage	2 Laboratories,	3 Lectures	Five Weeks
Equipment	3 Laboratories,	2 Lectures	Five Weeks
Managerial Problems	3 Laboratories,	1 Lecture	Five Weeks
Grasses and Turf Culture	3 Laboratories,	2 Lectures	Six Weeks
Cost Keeping and Analysis	3 Laboratories,	2 Lectures	Four Weeks
Soils and Fertilizers	2 Laboratories,	2 Lectures	Full Term

Forum and special lecture hour daily during full term.

Description of Courses

I. Water Systems.—A study of standard types of water systems, with particular reference to the relation of size of pipe, pressure and nozzles, to the flow and delivery of water. *Professor C. I. Gunness*

II. Soils and Fertilizers (Special for Greenkeepers).—Fundamental properties of soils and their management as related to golf green conditions will constitute the main part of the course. The study of fertilizers and their uses will be made as complete as possible. Individual problems and discussions will be given all the time and attention warranted. *Department of Agronomy*

III. Equipment.—A study of the major equipment used on the golf course, with particular reference to mowers (fairway and putting green,) spraying equipment and compost mixers. A very thorough study of lawn mowers will be made in this course. All types of mowers are available for study. Minor equipment will also be discussed.

Assistant Professor L. S. Dickinson

IV. Managerial Problems.—This course uses for its laboratory a very large and complete model of a golf course, about which the many problems of a greenkeeper are studied and the influencing factors noted.

The making and presentation of reports to green chairmen and committees is also a part of this course. *Assistant Professor L. S. Dickinson*

V. Grasses and Turf Culture.—At the completion of this course the student should be able to identify the various turf grasses and to thoroughly understand their cultural requirements. The various cultural practices and their effects are carefully studied and turf diseases and pests are also included in this course. *Assistant Professor L. S. Dickinson*

VI. Drainage.—The entire problem of land drainage will be discussed and practical problems worked out. The student will be taught the use of the level and how to set ditch grades. *Assistant Professor M. J. Markuson*

VII. Botany for the Greenkeeper.—Laboratory demonstration and lecture discussions dealing with the living plant and its parts and consideration of the work performed by each part. *Assistant Professor W. H. Davis*

VIII. Entomology for the Greenkeeper.—This course contains a brief introduction as to what insects are and their relationships. The greater part of the course will be devoted to identification, life history and control measures of insects damaging greens. *Intructor Frank R. Shaw*

IX. Cost Keeping and Analysis.—The value of cost keeping and its analysis will be demonstrated, and a method of cost keeping will be taught. The many factors that enter into the cost will be noted, analyzed and adapted to individual problems. The distribution and directing of the workmen will also be studied. *Assistant Professor L. S. Dickinson*

X. The lectures on landscape appreciation will be given by Professor Frank A. Waugh, Head of the Department of Landscape Architecture.

Forum and Special Lecture Hour.—One hour is set aside daily for a summarization of the preceding day's work, or for discussions with any visiting greenkeeper, green chairman, or for special lectures.

Assistant Professor L. S. Dickinson, Leader

Information

For further information write to the Director of Short Courses, or to Professor Lawrence S. Dickinson, Department of Agronomy, Massachusetts State College, Amherst, Massachusetts.

WINTER SHORT COURSE IN DAIRY BACTERIOLOGY

(Methods for Testing Milk)

January 4 to January 16, 1937

General Information

Each year numerous requests are received by this department for individual instruction in modern bacteriological methods for testing milk. The majority of these requests are due to the interest of the modern dairy man in the quality of his product, as expressed by results of chemical and bacteriological examinations and a desire to more accurately control production on the farm and in the dairy plant. A two weeks' course on modern testing methods has been designed to meet the need of the dairy man who wishes to provide a means of making these bacteriological tests in his own plant laboratory.

Admission and Registration

There is no prerequisite for the course. Students must be at least eighteen years of age and must have completed the elementary or common schools.

Students should enroll by mail. See special application blank in front of announcement. Early registrations will be given preference.

Ten students will be the maximum number admitted to this course. Unless five students have registered prior to the opening day, the course will not be given.

Tuition, Fees and Expenses

There is a tuition fee of two dollars and each student is required to pay the Treasurer a registration fee of two dollars per course.

Description of the Course

Five afternoons each week will be devoted to laboratory discussions, demonstrations and manipulation of the Breed and Brew, Frost Micro Plate, Methylene Blue Reduction, Burri and Standard Plate Methods of examining milk. Each student will be given ample opportunity to perform these tests on numerous milk samples. Instruction will also be given in the correct use and care of the compound microscope.

Mornings may be spent in the department or college library where there are available numerous books and pamphlets on dairy bacteriology and the relationship of milk and milk products to the Public Health.

Information

For further information write to the Director of Short Courses, or to Professor Leon A. Bradley, Massachusetts State College, Amherst, Mass.

WINTER SHORT COURSES IN DAIRYING

January 18 to February 13, 1937

The courses are intended not only for experienced milk plant, ice cream and creamery men, but for men with little dairy experience, who have a desire for knowledge in the various dairy manufacturing fields. Those who are inexperienced should plan to take all four courses. Farm men and women, who are responsible for milk handling, butter making, or the making of soft cheese will find the first and second courses adapted to their needs.

There are no prerequisites for the courses. A certificate showing the subject studied is given at the end of each course to those doing satisfactory work.

Admission

There are no entrance requirements except that the student must be eighteen years of age and must have a common school education.

Registration

Students should enroll by mail. See application blank in front of announcement.

Enrolments for each of the four dairy courses described in the following paragraphs should be made at least three days prior to the beginning of the course. Those failing to enroll by mail may do so on arrival for the course. The work begins for each course on the afternoon of the opening day. Therefore, those enroling should arrive early enough in the morning so that time is available for registering, securing accommodations, etc.

Early registrations are given preference. A maximum of 20 will be adhered to for all courses. Second courses will be given in case the number of registrants warrant it.

All applications for entrance to these courses should be addressed to the Director of Short Courses, Massachusetts State College, Amherst, Mass.

Upon arrival the students should report at the office of the Director of Short Courses in South College, for information concerning rooming accommodation and for registration.

Tuition, Fees and Expenses

There is a tuition fee of two dollars for each course, and each student is required to pay the Treasurer a registration fee of two dollars per course.

Students will need white suits for laboratory work, and may wish to purchase one or more textbooks for each course.

Board may be obtained at the college dining hall at $6.50 a week or in private boarding houses from $6.00 to $7.00. Rent for furnished rooms in private houses varies from $2.50 to $5.00 a week for each occupant.

Description of Courses

Course I. Milk and Cream Testing; Analyzing and Inspecting Milk Products—(January 18—23)

This course is designed to help men and women to become proficient in operating the Babcock test, acidity test, use of the lactometer, the Methylene Blue test and Plate Counts, as well as other methods commonly used in testing, analyzing, and inspecting dairy products.

The course should be of special value to those interested in dairy inspection work, cow testing association positions, or laboratory control work which is essential in milk handling.

Opportunity is given during the course to secure the Massachusetts Babcock Testing certificate.

Course II. Milk Plant Operation and Manufacture of Surplus Milk Products—(January 25—30)

This course should help milk plant and creamery employees to a better understanding of the essentials involved in the scientific handling of milk and creamery products.

Some of the lecture and discussion topics are: general scope of the market milk industry, value of milk as a food, relation of bacteria to milk, sanitary production, marketing, plant construction and selection of equipment, processing, delivery, handling surplus, standardizing, grading, and labeling, and care of milk in the home. Special attention will be given to economic methods of marketing surplus milk through cottage and other soft cheeses, and commercial buttermilk.

Laboratory exercises will cover milk sampling, the scoring of dairies, cream line problems, the scoring of milk, the study of milk plant equipment, milk processing, the manufacture of commercial buttermilk, of cottage, neufchatel, and cream cheese and butter.

Practical application of dairy tests and of lecture work will be carried out in the college creamery and dairy barn.

Course III. Ice Cream; Testing and Analyzing Ingredients Used in Ice Cream Making, the Standardizing of Mixes, and Freezing (February 1—6)

This course is planned for those wishing to enter the ice cream business, but have had no previous experience along this line.

Lecture and laboratory work will cover the selection of ingredients for the ice cream mix, standardizing and calculating the mix, processing the mix, freezing and yield control, causes and remedies of ice cream defects, etc. Actual experience will be secured in making ice cream mixes and freezing work. Different kinds of ice cream will be made, as well as ices and sherbets. The handling of refrigeration machinery will be included in this course.

All those enrolled in this course should plan to stay over for the second week's work in ice cream making.

Course IV. Ice Cream Making for Experienced Men—(February 8—13)

This course is designed for those who have had actual experience in ice cream making and wish to secure a more thorough knowledge of their work.

Lectures and laboratory work will cover a study of various factors affecting efficient freezing operations, the effect of variations in composition and manufacture on quality of the finished product, etc. Round table discussions of new methods and recent experimental work, as well as individual problems will be included. Some specialists in the ice cream business and closely allied fields will speak before the group.

Information

For further information write to the Director of Short Courses or to Professor Julius H. Frandsen, Massachusetts State College, Amherst, Massachusetts.

FIVE-DAY SHORT COURSE FOR TREE WARDENS AND TOWN FORESTERS

March 22 to March 27, 1937

A course designed to be of use to town tree wardens, city foresters, and others whose major interest is the care of shade trees.

This course was first organized at the request of the Massachusetts Tree Wardens Association and consists of lectures and field work. The program of the course will include (a) lectures and demonstrations in the care of shade trees, (b) recognition and control of shade tree insects, (c) recognition and control of shade tree diseases, (d) characteristics and properties of species desirable for use as shade trees. Field work and demonstrations will be conducted on the College campus where a great variety of shade tree species is available for study.

Registration

Students should fill in application blank in front of this bulletin and mail to Director of Short Courses, Massachusetts State College, Amherst, Massachusetts.

Upon arrival the students should report at the office of the Director of Short Courses in South College for registration, as the work of the course begins in the afternoon of the opening day.

Tuition, Fees and Expenses

There is a tuition fee of two dollars and each student must pay the Treasurer a registration fee of two dollars. Total cost $4.00.

Information

For further information write to the Director of Short Courses, or to Professor Robert P. Holdsworth, Massachusetts State College, Amherst, Massachusetts.

APPLICATION FOR ENROLMENT
IN THE
TEN WEEKS' COURSE FOR GREENKEEPERS
January 4, to March 15, 1937

Date .....

Name .....

Home Address .....

Business Address .....

Age ..... Present Occupation .....

Previous Schooling .....

I hereby certify that the above applicant for the Winter School Course for Greenkeepers is either,—(1) a member of the green committee, (2) a greenkeeper, or (3) an employee of this club.

Signed .....
Greenkeeper

Signed .....
Chairman of the Green Committee

Mail this blank to Roland H. Verbeck, *Director of Short Courses,* Massachusetts State College, Amherst, Mass.

THE STOCKBRIDGE SCHOOL OF AGRICULTURE
A Two-Year Non-Degree Course in Vocational Agriculture

For eighteen years the Massachusetts State College in addition to its degree courses has been conducting non-degree courses for students who wish to get fundamental training for some agricultural business. More and more, high school graduates, not otherwise prepared for college entrance, whose inclinations are towards the practical field of agriculture are finding the work of this department of the College well suited to their needs.

The work is divided into eight major programs—Dairying, Animal Husbandry, Poultry, Floriculture, Horticulture, Pomology, Vegetable Gardening, and Wildlife Management, one of which is selected by the student, depending on the job for which he wishes to secure training.

No entrance examinations are required. Minimum age seventeen years; minimum schooling eighth grade. Two hundred and forty students were enrolled in 1935.

The first year consists of six months' study at the College and six months of required agricultural placement training, under the supervision of the College. During the placement period the student is expected to learn much of the practical side of his particular vocation. He is recommended to a position. These positions are on farms, in dairies, greenhouses, poultry plants. The nature of the position depends on the student's particular objective.

The second year consists of eight months' study at the College. On the completion of the course a diploma is granted. Tuition is $50.00 per semester to residents of the Commonwealth. Semester begins October 5, 1936.

For a complete catalog of the Stockbridge School of Agriculture, containing an application blank, write to Director Roland H. Verbeck, Massachusetts State College, Amherst, Mass.

MASSACHUSETTS STATE COLLEGE

THE GRADUATE SCHOOL CATALOGUE NUMBER

OF THE

STATE COLLEGE BULLETIN

The Graduate School Catalogue for the sessions of 193[illegible]–37 is part of the Seventy-third Annual Report of the Massachusetts State College and in conjunction with the general catalogue of the College it constitutes Part II of Public Document 31. (Sec. 8, Chapter 75, of the General Laws of Massachusetts.)

STATE COLLEGE BULLETIN

Amherst, Massachusetts

Volume XXVIII November, 1933 Number 8

Published eight times a year by the Massachusetts State College, January, February March, April, May, June, October, November. Entered at Post Office, Amherst, Mass., as second-class matter.

PUBLICATION OF THIS DOCUMENT APPROVED BY THE COMMISSION ON ADMINISTRATION AND FINANCE

1m. 11-'36. No. 9050.

CALENDAR.

1937.

January 4, Monday, 8:00 A.M.	Classes begin following Christmas Recess
January 25–February 3, Monday–Wednesday	Final Examinations
February 3, Wednesday, 5:00 P.M.	First Semester ends
February 8, Monday, 8:00 A.M.	Second Semester begins
February 22, Monday	Holiday, Washington's Birthday
March 27–April 5, Saturday 12 M.–Monday, 8:00 A.M.	Spring Recess
April 19, Monday	Holiday, Patriots' Day
May 31, Monday	Holiday, Observance of Memorial Day
June 2–11, Wednesday–Friday	Final Examinations
June 11, Friday	Second Semester ends
June 11–14, Friday–Monday	Commencement
July 6–August 14	Summer School
September 20, Monday	First Semester begins for Freshmen
September 22, Wednesday, 2:00 P.M.	Opening Convocation for all Students
September 23, Thursday, 8:00 A.M.	All Class Schedules start
October 12, Tuesday	Holiday, Columbus Day
November 11, Thursday	Holiday, Armistice Day
November 24–29, Wednesday, 12 M.–Monday, 8:00 A.M.	Thanksgiving Recess
December 18–January 3, Saturday, 12 M.–Monday, 8:00 A.M.	Christmas Recess

1938.

January 24–February 2, Monday to Wednesday	Final Examinations
February 2, Wednesday, 5:00 P.M.	First Semester ends
February 7, Monday, 8:00 A.M.	Second Semester begins
February 22, Tuesday	Holiday, Washington's Birthday
March 26–April 4, Saturday, 12 M.–Monday, 8:00 A.M.	Spring Recess
April 19, Tuesday	Holiday, Patriots' Day
May 30, Monday	Holiday, Memorial Day
June 1–10, Wednesday–Friday	Final Examinations
June 10, Friday	Second Semester closes
June 10–13, Friday–Monday	Commencement

THE TRUSTEES OF THE COLLEGE.

Organization of 1937.

Members of the Board.

	Term Expires
Mrs. Lottie A. Leach of Walpole	1937
James F. Bacon of Boston	1937
Mrs. Lena Edge Wilson of Pittsfield	1938
Harold L. Frost of Arlington	1938
David H. Buttrick of Arlington	1939
David J. Malcolm of Charlemont	1939
John F. Gannon of Pittsfield	1940
Davis R. Dewey of Cambridge	1940
Joseph W. Bartlett of Boston	1941
Philip F. Whitmore of Sunderland	1941
John Chandler of Sterling Junction	1942
Frederick D. Griggs of Pittsfield	1942
Nathaniel I. Bowditch of Framingham	1943
William C. Monahan of Framingham	1943

Members Ex Officio.

His Excellency James M. Curley, *Governor of the Commonwealth.*
Hugh P. Baker, *President of the College.*
James G. Reardon, *Commissioner of Education.*
Howard Haines Murphey, *Commissioner of Agriculture.*

Officers of the Trustees.

His Excellency The Governor, James M. Curley of Boston, *President.*
Nathaniel I. Bowditch of Framingham, *Vice-President.*
Robert D. Hawley of Amherst, *Secretary.*
Fred C. Kenney of Amherst, *Treasurer.*

The Graduate School Staff.

Hugh P. Baker, *President of the College.*
Fred J. Sievers, *Director of the Graduate School.*
Dean of the College.
Heads of all Divisions.
Heads of Departments in which Graduate Courses are offered.
Professors, Associate Professors and Assistant Professors in charge of Graduate Courses.

The Graduate School Advisory Committee.

Fred J. Sievers, *Director of the Graduate School,* Chairman.
William L. Machmer, *Dean of the College.*
Ralph A. Van Meter, *Head of the Division of Horticulture.*
Charles A. Peters, *Professor of Inorganic and Soil Chemistry.*
John B. Lentz, *Head of the Department of Veterinary Science.*
Winthrop S. Welles, *Head of the Department of Education.*

GENERAL INFORMATION.

HISTORY.

Graduate courses leading to the degree of doctor of science were offered in botany under President Clark and in chemistry under Professor Goessmann as early as 1876. No candidate, however, completed the requirements for that degree. It was not until 1902, under President Henry H. Goodell, that courses leading to the degree of master of science were offered. This degree was first conferred in June, 1896, on two candidates. Graduate courses leading to the degree of doctor of philosophy were first offered in 1897, with chemistry, botany and entomology as major and minor subjects. The first degree was conferred on one candidate in June, 1902.

In the early years the graduate work was conducted under the direct administration of the President in conjunction with the four year courses. The demand for advanced work increased, however, and in June, 1908, the trustees made the Graduate School a separate unit in the College and appointed a director. Beginning with July 1, 1930, the responsibilities of the Graduate School were combined with those of the Agricultural Experiment Station. This arrangement is proving mutually beneficial by making the staff and equipment of the Experiment Station available for service in the Graduate School, and in turn providing an opportunity to utilize the services of graduate students in organized research projects.

LOCATION AND LANDS.

The Massachusetts State College is located in Amherst, a town of about six thousand people, overlooking one of the most picturesque sections of the Connecticut Valley. From the standpoint of teaching material in the field of science and agriculture, the location is ideal. Amherst is ninety-seven miles from Boston, fifty miles from Worcester, twenty-five miles from Springfield, eighteen miles from Greenfield and eight miles from Northampton. Busses connect the town with Northampton, Greenfield, Holyoke and Springfield, or it can be reached direct over the Central Vermont Railroad. The campus consists of a tract of approximately seven hundred acres, lying about a mile north of the village center. The College is well provided with modern buildings and equipment, description of which may be found in the general catalogue.

PURPOSE AND SCOPE OF THE GRADUATE SCHOOL.

The purpose of the Graduate School is to provide qualified students with proper guidance in the methods of advanced study and research. Courses leading to the degrees of doctor of philosophy, master of science, and master of landscape architecture are available. Students who desire advanced courses but who do not wish to become candidates for an advanced degree are also admitted.

Doctor of Philosophy.

Candidates for the degree of doctor of philosophy are required to pursue study in three subjects, one of which is designated as the major, and the others as minors. An original thesis is considered a part of the major subject. The degree is conferred upon graduate students who have met the following requirements:—

1. The devotion of at least three years to three subjects of study and research in residence at the College.
2. The earning of not less than one hundred credits of which not less than sixty-five shall be in the chief or major subject, and not less than fifteen in each of two minor subjects.
3. The preparation of a satisfactory thesis.
4. The passing of final examinations, written and oral, in both the major and minor subjects.
5. The presentation of evidence of a working knowledge of both French and German.
6. The passing of a public oral examination.
7. The payment of all College fees and expenses.

It should be emphasized that the requirements for this degree are not computed primarily in terms of time and credits but that the degree is conferred only upon such students as have reached satisfactory attainment in some special branch of learning.

Master of Science.

Candidates for the degree of master of science are required to pursue study in two subjects, one of which is designated as major and the other as minor. When desirable and approved by the director, the minor may be made up of subjects from more than one department. An original thesis is considered a part of the major subject.

The degree is conferred upon graduate students who have met the following requirements:—

1. The devotion in residence of at least one year to two subjects of study and research.
2. The earning of not less than thirty-four credits, of which approximately two thirds shall be in the major subject.
3. The preparation of a satisfactory thesis in the major subject.
4. The passing of final examinations, written and oral, in the major subject.
5. The payment of all College fees and expenses.

Master of Landscape Architecture.

Candidates for the degree of master of landscape architecture are expected to conform to the established courses as specified by the department of landscape architecture. The degree is conferred upon graduate students who have met the following requirements:—

1. Work covering at least three years, of which a minimum of one and one-half years must be devoted to study in residence, and a minimum of one year spent in practice outside of the College, specific requirements concerning the nature of such practice to be laid down by the department.
2. Submission of a complete written report on the work done in practice outside of the College.
3. Written approval from the employer as to the quality of service during the period devoted to practice outside of College.
4. Preparation of a satisfactory thesis.
5. The presentation of convincing evidence of genuine aptitude for some branch of landscape architecture as design, construction or management.
6. Completion of final examinations.
7. Payment of all College fees and expenses.

The degree of bachelor of landscape architecture may be earned upon the completion of one year of specialized work in that field. (See page 30.)

ADMISSION.

Admission to the Graduate School will be granted:—

1. To graduates of the Massachusetts State College.
2. To graduates of other institutions of good standing who have received a bachelor's degree substantially equivalent to that conferred by this College.

ENROLLMENT FOR A DEGREE.

Admission to the Graduate School is not to be interpreted as implying admission to candidacy for an advanced degree in any given department. Such candidacy is subject to specific requirements laid down by the several departments, and the student must secure the approval of the head of the department in which he desires to major before he can become a candidate for a degree in that subject.

Non-Degree Enrollment.

Graduate work may be taken by students who are not candidates for a degree. Such enrollment permits the special privilege of a wider range in the selection of courses. The courses selected should, however, bear an appropriate relation to

one another and be within the confines of the preparation of the student. A statement of the subjects chosen must, in each case, be submitted to the director of the Graduate School for approval.

Prerequisites.

In case an applicant has not completed in his undergraduate work as much of the subject he desires to select for his major study as is required of graduates of Massachusetts State College, he will be expected to pursue such undergraduate courses in that subject as the head of the department may consider necessary, without credit toward the advanced degree.

In the case of minor subjects for advanced degrees, credit begins to accrue from the point where the previous training of the applicant ended, whether it be graduate or undergraduate in its rating at this College—subject, however, to such limitations as may be fixed by the department concerned.

General Statement.

A working knowledge of French and German is considered important for successful graduate work in practically all the major lines, and is required for the doctor of philosophy degree. Students not offering modern language for admission will be given an opportunity to acquire same along with their graduate work.

The graduate staff reserves the privilege of recommending and allowing courses completed in other institutions as a part of the work for advanced degrees at this College, whenever such a policy seems advisable. A certain amount of work *in absentia* will also be permitted, provided it is prosecuted under satisfactory direction and supervision, and regular and sufficient reports of progress are submitted.

The courses listed under departmental statements in the succeeding pages constitute the principal and characteristic work of the graduate student.

The College reserves the right to make changes in the requirements for degrees without notice.

COURSES OFFERED.

Doctor of Philosophy—Major Subjects.

Courses available as major subjects for the degree of doctor of philosophy:—

Agricultural Economics and Farm Management
Agronomy
Bacteriology
Botany
Chemistry
Economics
Entomology
Food Technology
Pomology
Poultry Science
Sociology

Master of Science—Major Subjects.

Courses available as major subjects for the degree of master of science:—

Agricultural Economics and Farm Management
Animal Husbandry
Agronomy
Bacteriology
Botany
Chemistry
Dairy Industry
Economics
Education
Entomology
Floriculture
Home Economics
Horticultural Manufactures
Pomology
Poultry Science
Psychology
Sociology

Master of Landscape Architecture.

Courses available for the degree of master of landscape architecture:—

Landscape Architecture

Minor Subjects.

Courses available as minor subjects:—

Agricultural Economics and Farm Management
Agronomy
Animal Husbandry
Bacteriology
Botany
Chemistry
Dairy Industry
Economics
Education
English
Entomology
Floriculture
Forestry
French
Geology
German
History
Home Economics
Horticultural Manufactures
Landscape Architecture
Mathematics
Philosophy
Physical Education
Physics
Physiology
Pomology
Poultry Science
Psychology
Sociology
Veterinary Science
Zoölogy

Theses.

A thesis is required of each candidate for an advanced degree. It must be on a topic belonging to the candidate's major subject, and must indicate that its writer possesses the ability and imagination necessary to carry on independent, constructive thinking. The following rules should be adhered to in the preparation and presentation of a thesis:—

1. The objective of a thesis should be an attempt to make a real contribution to knowledge and practice. When completed it should be of a quality worthy of publication as a contribution from the department concerned.
2. The thesis, in its completed form, will be judged largely upon the ability of the author to review literature and reach definite deductions; to formulate a problem, plan a method of attack, and work out a solution; and to summarize his material and draw conclusions. Scholastic attainment in writing and presenting the results of the study will also be an important factor in the evaluation. No thesis markedly poor in its English will be accepted.
3. After the student, in consultation with his major adviser (head of the department in which the student selects his major), decides upon a thesis subject, he is required to submit an outline to the director of the Graduate School. The director, with this as a basis, selects from the graduate staff a thesis committee to which the student then submits the outline for approval. This committee will, thereafter, have direct charge of all matters pertaining to said thesis, and it is recommended that the student use the advice available from this source in the progress of his research. The thesis must have the approval of this committee before arrangements are made for the final examination for the degree.
4. Three complete, bound copies of the thesis, including drawings and any other accessories, are required by the graduate school office in order that the files in the director's office, the College library and the department in which the thesis was prepared may be supplied.
5. If the thesis is printed, whether in periodical or book form, the fact that it is a thesis submitted for an advanced degree at Massachusetts State College shall be explicitly stated in the title itself or as a footnote on the first page. Such modifications as may be deemed necessary for publication shall have the approval of the director.
6. Because of the time required to give adequate consideration to the research conducted by the student, it is highly desirable that theses be submitted to the committee, in the case of doctors' theses, not later than March 15, and in the case of masters' theses, not later than May 15 of the academic year in which the degrees are to be conferred. The theses in their final form shall be deposited with the director by June 1.

7. If typewritten, whether designed for publication or to remain in the typewritten form, the size of the sheet, the arrangement of the title page, the general structure of the thesis, the character of the paper, and the binding must conform to definite standards.

A. *Size of sheet.* Size of sheet must measure 8½ x 11 inches.

B. *Form of title page.* The title page must be arranged in this order:—

a. Subject.
b. Name of author.
c. "Thesis submitted for degree of—".
d. "Massachusetts State College, Amherst."
e. Date.

and should be distributed over the page as artistically as possible.

C. Following the title page, the arrangement may take such form, variable of course with the subject matter, as is illustrated below:—

a. An analytical outline of thesis.
b. An introductory statement in which the purposes of the author are set forth.
c. The body of the thesis composed of literature critically reviewed and deductions made, formulation of method of attack or procedure, and results secured. (All literature reviews and any work done by others should be so separated that no question can be raised as to which portion of the thesis represents the original investigation. It should be clearly kept in mind that *compilation* is not considered original investigation.)
d. Summary and conclusions.
e. Bibliography. (This should have the approval of the chairman of the thesis committee before final arrangement.)
f. Acknowledgments.
g. Statement of approval signed by members of the thesis committee.

D. *Paper.* See sample in College store.

E. *Binding.* See sample of binding in director's office.

8. All theses are the property of the College and subject to the will of the director of the Graduate School.

FINAL EXAMINATIONS.

For the degree of doctor of philosophy final examinations on the minors are given upon the completion of the subjects. In the major subject, a written examination, if successfully passed, is followed by an oral examination in the presence of the graduate staff.

For the degree of master of science, or master of landscape architecture, a final examination in the major subject, which may be written or oral, or both, is given by the department concerned.

ESTIMATE OF EXPENSES.

A charge of $50 per semester, payable in advance, which covers tuition, laboratory and student health fees, is imposed on students who are residents of Massachusetts. For residents of other states or foreign countries, this charge is $110 per semester. In cases where students carry less than a full schedule of courses, a special tuition rate is provided. For purposes of definition, all students claiming residence in the State shall at time of admission provide the treasurer's office with an official statement from their town or city clerk as evidence. Also, the student must present evidence of successful vaccination.

Board should not be in excess of $9 per week, with a minimum of about $6. Rooms for graduate students are not available in the College dormitories, but can be rented in private homes at from $15 to $20 per month. The costs of books and incidentals should not exceed $100 per year.

ASSISTANTSHIPS.

Through a fund set aside for that purpose, the College offers a number of graduate assistantships to students. The value of these is limited to $600 per year, and appointment is made for a one-year period. These appointments are especially suited to students who desire to gain teaching experience and make themselves at least partly self-supporting while continuing their education. It should be recognized, however, that, in cases where students render this part-time service in return for the financial assistance extended, the residence time requirements for the degree in question are necessarily longer. Application for appointment to any assistantships should be made to the director of the Graduate School.

FELLOWSHIPS.

The Agricultural Experiment Station in its program of investigation frequently finds it desirable to utilize the services of graduate students qualified to do certain types of technical work required in connection with its several research projects. Funds are available for this purpose and qualified students may be elected to such fellowships. Not infrequently this arrangement affords an opportunity for the student to satisfy his thesis requirement by completing some unit of work within a larger project organized in the research program of the Experiment Station.

In recent years industrial concerns have been rather anxious to have certain investigations undertaken for them by the Experiment Station. For this service they are willing to lend financial support, and in deserving cases it has proven very desirable to accept and utilize these funds for fellowship purposes. At present several fellowships are supported on this basis. These are proving very satisfactory from the standpoint both of the student and the industry supporting the investigation.

GRADUATE COURSES DURING THE SUMMER.

The College offers opportunities to pursue graduate courses during the summer in connection with the regular Summer School. While provision may be made for special study with several departments during the summer period, the scheduled courses are offered primarily for teachers who seek advanced work in education and closely related subjects for purposes of better preparing themselves for more effective service in the teaching profession. Details regarding courses offered, facilities for study, environment, etc., may be found in the Summer School catalogue, a copy of which is available upon request to the director of Short Courses.

DESCRIPTION OF COURSES

Agricultural Economics and Farm Management.

COURSES FOR MAJOR OR MINOR CREDIT.

126. Economics of Agricultural Production. Credit, 3.
Assistant Professor Barrett.

155. Marketing Farm Products. Credit, 3.
Professor Lindsey.

156. Fundamentals of Cooperation. Credit, 3.
Professor Lindsey.

158. Agricultural Credit and Land Appraisal. Credit, 3.
Professor Moser.

165. Farm Account Analysis. Credit, 3.
Professor Branch.

167. Market Problems and Market Price Policies. Credit, 3.
Assistant Professor Bell.

168. Agricultural Policy. Credit, 3.
Professor Westcott.

170. Agricultural Economic Theory. Credit, 3.
Professor Lindsey.

175. Farm Organization. Credit, 3.
Assistant Professor Barrett.

176. Farm Operation and Advance Farm Organization. Credit, 3.
Assistant Professor Barrett.

179. Principles and Methods of Stat stics. Credit, 3.
Professor Lindsey.

180. Advanced Statistics. Credit, 3.
Professor Lindsey.

182. Advanced Farm Operation. Credit, 3.
Assistant Professor Barrett.

184. Research Methods and Procedure. Credit, 3.
Assistant Research Professor Creek.

190. Seminar. Each semester, Credit, 1.
The Department.

200. Thesis.
The Department.

Agronomy.

COURSES FOR MAJOR OR MINOR CREDIT.

110. Studies in the Culture of Field Crops.—Laboratory, field, or other problems concerning the tillage of field crops. Credit, 2–5.

115. The Fertilization of Field Crops. Credit, 2–5.

125. The Improvement of Field Crops.—Readings, discussions, laboratory or field work in the improvement of field crops by breeding and selection. Credit, 2–5.

135. Nutrition of Field Crops.—Readings, laboratory and greenhouse work on problems of nutrition. Credit, 2–5.

136. Grasses.—Studies in the history, distribution, characteristics, commercial uses, and nutrition of grasses. Credit, 2–4.

137. Fine Turf Culture.—Laboratory and field studies in the establishment and culture of turf grasses. Credit, 2–4.

145. Studies in Soil Physics.—Problems concerning texture, structure, and other physical properties of soils. Credit, 2–5.

155. Studies in Soil Management.—Study of a wide range of problems arising in the management of soils for crop production. Credit, 2–5.

160. Soil Technology.—Includes studies of properties, behavior, and technical utilization of soils. Credit, 2–5.

163. Chemistry of the Soil.—Includes chemical studies of availability of nutrients, base-exchange studies, etc. Credit, 2–5.

170. Studies of Soil Fertility.—Investigation of the factors and conditions affecting the productivity of soils. Credit, 2–5.

175. Organic Matter of the Soil.—Includes studies of the origin, properties and methods of maintenance of soil organic matter, and its physical and biochemical relations to soil fertility. Credit, 2–5.

185. Fertilizers and the Soil.—Concerning the interrelationships of soils and fertilizers when mixed. Credit, 2-5.

190. Studies in Literature.—Practice in preparing abstracts and summaries of the literature bearing on selected topics. Credit, 2–5.

200. Thesis.—For students taking major work in Agronomy. Credit, 10–30.

Animal Husbandry.

COURSES FOR MAJOR OR MINOR CREDIT.

110. Nutrition of Farm Animals.—A course dealing with the chemistry and physiology of the digestion, absorption and utilization of feeds. The major portion of the course consists of a study of the literature concerning the phases of nutrition that are of the greatest interest and value to the individual student. Credit, 5.

120. Genetics of Farm Animals.—A course dealing with the inheritance of characteristics in the larger farm animals. The work may be based upon herd book and advanced registry data or it may be of an experimental nature with either small laboratory animals or with the larger farm animals. The student will be expected to make a thorough review and analysis of available data in the field of his choice. Credit, 5.

130. Problems in Livestock Production.—This course will deal with some specific problem in feeding, management, or production of some specific livestock product such as milk, wool, meat, etc. Assistance will be given in outlining the problem and setting up the experimental procedure and the student will be held responsible for collecting and analyzing the data. Credit, 5.

200. Thesis.—Research work in animal husbandry may consist of historical studies of the modern breeds of livestock or experimental studies in animal nutrition or genetics. Credit, 10.

COURSES FOR MINOR CREDIT ONLY.

50. The Nutrition of Farm Animals.—This course is designed to give the student an understanding of the mechanics of digestion, absorption, circulation, respiration and excretion; the functions of proteins, carbohydrates, fats, vitamins, and minerals in body metabolism; the functions of those endocrine glands primarily concerned with nutrition; the nature and value of the various feed stuffs; and methods of calculating rations in order to meet the requirements of various classes of livestock.
2 class hours. 1 2-hour laboratory period, credit, 3.

51. The Breeding and Improvement of Farm Animals.—This course is planned to acquaint the student with the facts of reproductive physiology, with the facts and theories of modern genetics, and to show how such knowledge may be utilized for the creation of more beautiful and more efficient animal types.
2 class hours. 1 2-hour laboratory period, credit, 3.

52. Advanced Meat Studies.—This course is designed to impart a knowledge of the fundamental principles involved in buying and efficiently utilizing meat

and meat products. One laboratory per week will be devoted to actual practice and observation in nearby packing plants.

2 2-hour laboratory periods, credit, 2.

53. Beef and Sheep Production.—This course includes studies of the development of the beef and sheep industries, situation and outlook, phases of production, systems of management, herd and flock improvement, feeding management, breeding, and equipment. During April and May trips are taken to the leading herds and flocks in New England, thus affording an opportunity for comparisons which will serve in evaluating quality characteristics.

2 class hours. 1 4-hour laboratory period, credit, 4.

75. Horse and Swine Production.—This course includes a study of the development of the breeds of draft and light horses and of swine, and a study of the economic, genetic, nutritional and managerial problems concerned in producing these classes of livestock with particular reference to New England conditions.

2 class hours. 1 4-hour laboratory period, credit, 4.

77. Dairy Cattle and Milk Production.—This course embraces all phases of dairy cattle production and management. It affords an opportunity to seek the solution to the economic, nutritional, genetic and managerial problems concerned in successful dairying. One period per week will be devoted to talks by specialists in the various fields. 4 2-hour laboratory periods, credit, 4.

81. Animal Husbandry Seminar.—Students will prepare original papers and talks on various pertinent topics. Round table discussions of animal husbandry investigational work and practices will be conducted.

1 2-hour laboratory period, credit, 1.

Bacteriology and Physiology.

COURSES FOR MAJOR OR MINOR CREDIT.

100. History of Bacteriology.—Studies in the development of bacteriology from the late seventeenth century to the present time, especially planned to show the developments of bacteriology in relation to agriculture, public health, the arts, industry, and medicine. Credit, 3.

120. Physiology of Bacteria.—Lectures and laboratory on the nature of the bacterial cell and on nutrition and metabolism with emphasis on certain fundamental aspects of physiological processes and activities. Designed for students specializing in bacteriology and open to others who have sufficient chemistry, general biology, and botany. Credit, 2–5.

130. Soil Bacteriology.—Accurate applications of microchemical methods are demonstrated. Biochemical and biophysical methods for measuring the physiological activities of soil microörganisms are studied. Nitrification, denitrification, and ammonification will be discussed in relation to their influence on soil fertility. Credit, 5.

140. Dairy Bacteriology.—Technical procedures used in establishing sanitation in relation to milk production and supply will be discussed. Modern methods involved in the preparation, control, and preservation of milk and dairy products are studied. Credit, 5.

150. Food Bacteriology.—Principles of food preservation and conservation; the application of scientific methods to the understanding of food fermentations and spoilage will be considered. This is arranged primarily for students with an excellent background in both chemistry and bacteriology. Credit, 5.

160. Hygienic Bacteriology.—Special consideration given to organization of disease control campaigns, laboratory management, the relationship of serology, immunology, and bacteriology to municipal, rural, and community health. Bacteriological, immunological, and serological procedures will be presented, and there will be discussion of problems showing their use for improving the condition and environment for human and animal life. Credit, 5.

170. Physiology, Human or Animal.—Study of the physiology of the circulation with special reference to intermediate metabolism; to be followed by a course

on the physiology of excretion. This course in physiology may be considered from the standpoint of human or animal physiology, according as the student may elect. Credit, 6.

190. Lectures and Study of Literature. Credit, 1 each semester.

200. Thesis.—Some bacteriological problem related to agriculture, food, or public health. Distributed as may be most beneficial for research work. Time and credit by arrangement. Credit, 10–30.

COURSES FOR MINOR CREDIT ONLY.

Bacteriology.

31. Introductory and General Bacteriology.—Designed to make microorganisms real and significant. The laboratory covers the use and proper care of the compound microscope, the preparation of culture media, methods of sterilizing equipment, the isolation and handling of pure cultures, simple and differential staining, studies on classification and cultural and biochemical studies on type species of pathogenic and non-pathogenic bacteria. Individual practice in the isolation and identification of bacterial forms is a required part of the laboratory assignment. The course aims to provide a basis for bacteriological study and interpretation and to furnish such material as will be valuable in understanding agriculture, domestic science, and public health problems.
2 3-hour laboratory periods, credit, 3.

52. Advanced Bacteriology.—A continuation of Course 31. The identification and differentiation of bacterial species by morphological, cultural, physiological and serological studies. The combined courses give to the student not only a comprehensive picture of various forms of existing bacteria but develop a specialized technique for their cultivation, isolation, and identification.
Prerequisite, Bacteriology 31. 2 3-hour laboratory periods, credit, 3.

61. Bacteriology. (Public Health.)—Considers the relation of the human body to its environment in the maintenance of health and the production of disease. The administration and organization of community health, the prevention or control of animal or human diseases of public health significance, are considered. A study of special community health problems and the relationship of these problems to social welfare is discussed. 2 class hours, credit, 2.

62. Bacteriology. (Public Health.)—Sanitation and its relation to agriculture, industry and public health. The microbiological features of air, water, soil, sewage, and refuse; industrial hygiene and the control of municipal and rural sanitary projects are considered.
Prerequisite, Bacteriology 31 or 61. 2 class hours, credit, 2.

81–82. Applied Bacteriology.—These two courses covering a full year's work are designed to give the student a working knowledge of present day applied bacteriology. The work in the laboratory is presented in three distinct sections: (1) soil, (2) food, (3) dairy. In soil, such subjects as the number and development of microörganisms in different soils, factors influencing their growth and activity, and changes wrought upon matter in the production of soil fertility, ammonification, nitrification, etc., receive attention. In food, a study of preservation, fermentation, spoilage, and methods of sanitary examination are considered. In dairy, emphasis is placed upon modern methods for examining the sanitary quality of milk and milk products. Groups of bacteria normally present, abnormal and normal fermentations, effect of temperature, and the rôle of milk in the transmission of disease, are some of the subjects receiving special consideration.
Prerequisite, Bacteriology 31. 2 3-hour laboratory periods, credit, 3 each semester.

85. Bacteriology. (Serology.)—This course aims to supplement Bacteriology 52 and is planned to complete work essential for the advanced study in bacteriology and physiological science. This course includes the study, preparation, and standardization of such biological products as antigens, agglutinins, precipitins, hemolysins and complement-fixation bodies, and the use of the same in differential bacteriology and disease diagnoses. Consideration is also given to isohemagglutins and their relation to human blood groups. Class limited to ten students.
Prerequisite, Bacteriology 52. 2 3-hour laboratory periods, credit, 3.

Physiology.

75. Physiology.—The object of this course is to establish a broad basis for physiological study. The study and use of instruments is emphasized. The correlation of physics, chemistry and biological science to the interpretation of functional activities is particularly considered. Aspects of nerve-muscle physiology, hemodynamics, alimentation, intermediate metabolism, and the general plan and structure of the body pertaining to each division of the work will be considered.
2 class hours. 1 2-hour laboratory period, credit, 3.

76. Physiology.—Physiology of internal and external respiration including studies on calorimetry and basal metabolism. This will be followed by work upon the physiology of excretion. An introduction to the physiology of the special senses will be presented. This course is especially planned for students with a broad training in biological subjects.
2 class hours. 1 2-hour laboratory period, credit, 3.
Prerequisite, Physiology 75.

Botany.

COURSES FOR MAJOR OR MINOR CREDIT.

100. Plant Physiology.—The lectures will consider, under the nutrition of the plant: its chemical structure, absorption of various nutrient substances and their changes in the plant, assimilation and dissimilation of carbon and nitrogen by autotrophic and heterotrophic plants; under changes in the form of plants: growth and form under constant external factors, the influence of variable external and inner factors on growth, form, and development; and under plant movements: the various tropisms, mutations, etc. Supplemental demonstrations, laboratory work and reading.
1 class hour. Credit, 1 each semester.

101. Plant Pathology.—A general consideration of the history, nature, and causes of plant disease; parasitism, predisposition, immunity, degeneration, natural and artificial infection, dissemination, epidemics, biologic strains, monstrosities and malformations, proliferation, prevention and control, economics of plant diseases. Supplemental reading and reports.
1 class hour. Credit, 1 each semester.

102. Plant Inheritance.—This course is planned to give the student a comprehensive understanding of the principles and facts of plant inheritance. A study is made of plant variations, Mendel's law of heredity, the physical basis of heredity as established by chromosome behavior, pure lines mutations, species, graft hybrids, etc.
1 class hour. Credit, 1.

103. Biologic Relations.—Consideration of certain phases of the morphological and physiological adaptations of plants with regard to insect visits; the rôle of thorns, hairs, tendrils, glands, etc.
1 class hour. Credit, 1.

105. Physiological Plant Pathology.—This course considers those plant diseases not due to bacterial or fungous parasites, but resulting from unfavorable physical or chemical conditions of the soil; from harmful atmospheric influences, such as dry air, excessive moisture, hail, wind, lightning, frost; from injurious gases and liquids; from lack of or too much light; from wounds. A knowledge of the normal physiology of the plant is required. Demonstrations and assigned readings.
1 class hour. Credit, 1.

106. History of Botany.—An historical survey of the science; lives of noted botanists; history of certain culture plants, such as wheat, corn, coffee, potato, rice, and their influence on civilization; reading. By arrangement. Credit, 2.

107. Methods in Drawing and Photographing for Thesis and Publication. Credit, 1–2.

110. Systematic Mycology.—Morphology and development of typical species representing the orders and families of fungi; practice in identification, collection and preservation of fungi; systems of classification; collateral reading.
1 class hour.
2 2-hour laboratory periods, one, or two semesters Credit, 3 each semester.

111. Advanced Plant Physiology.—The work offered in this course is arranged to meet individual needs. Botany 77–78 or their equivalent are prerequisite. Credit, 5.

112. Advanced Plant Pathology.—The work offered in this course is arranged to meet individual needs. Botany 75–76 or their equivalent are prerequisite. Credit, 5.

190. Collateral Reading.—Extensive reading of botanical literature in English, German and French, designed to give the student a broad knowledge of the science, is required of all major students. Final examinations are based in part upon this reading course. Credit, 5.

200. Thesis.—Each major student is required to select a problem in plant pathology or physiology (in other branches at the discretion of the department) for original investigation, and the thesis must embody a distinct contribution to knowledge. The thesis work counts for not more than 50 per cent of the total number of major credits required for either degree.

COURSES PRIMARILY FOR MINOR CREDIT.

57. Microtechnique.—A course in the preparation of microscopic mounts including the celloidin and paraffin methods and involving the use of microtomes and of differential stains. 2 2-hour laboratory periods. Credit, 2.

59–60. Systematic Botany of the Higher Plants.—Study of gymnosperms and angiosperms. Lectures deal with the interrelations of the flowering plants and with their ecology, distribution, and economic importance. Laboratory work consists of a critical study of types from the most important natural plant families. Particular emphasis is laid on the flora of Massachusetts. The department herbarium and greenhouses supply material of important tropical forms for study.
2 class hours. 1 2-hour laboratory period. Credit, 3 each semester.

61–62. The Comparative Anatomy of Green Plants.—In the lectures study is directed to the comparative anatomy of green plants from the evolutionary standpoint. Particular emphasis is laid upon the woody forms both living and extinct. Of the latter, the department is fortunate in possessing excellent sets of micro-preparations and lantern slides.
2 class hours. 1 2-hour laboratory period. Credit, 3 each semester

75–76. Plant Pathology.—Comprehensive study of diseases of plants; training in laboratory methods and technique, including culture work and artificial inoculation of hosts; miscellaneous diagnosis; study of literature and representative life histories of pathogens. Prepares for civil service, experiment station, and college work.
1 class hour. 4 2-hour laboratory periods. Credit, 5 each semester.

77–78. Plant Physiology.—Study of the factors and conditions of (a) plant nutrition, including the taking up of water and mineral substances, the assimilation of carbon and nitrogen, and the release of energy due to the processes of dissimilation; (b) plant growth, including the influence of internal and external factors on growth, the development of reproductive and vegetable organs; (c) plant movements, including those due to the taking up of water, and those of both motile and fixed forms in response to external stimuli. Weekly conferences are held, at which students report on assignments to original sources in the literature.
2 class hours. 3 2-hour laboratory periods. Credit, 5 each semester.

81. Plant Ecology.—Study of plants in relation to their environment, with special emphasis on the newer field studies, which have given increasing insight into the physical and chemical factors as they influence growth and development in the field and the adaptability of plants to changes in their normal environment. The various types of plant formations and successions are studied, as well as the mutual and antagonistic relations of certain plants.
1 class hour. 1 2-hour laboratory period. Credit, 2.

Chemistry.

COURSES FOR MAJOR OR MINOR CREDIT.

101. Inorganic Preparations.—Laboratory. The preparation of chemical products from raw materials. The manufacture and testing of pure chemicals. The laboratory work is essentially synthetic in nature, and is designed to aid in acquiring a more adequate knowledge of inorganic chemistry than is to be obtained by chemical analysis alone. Either semester. Credit, 5.

Associate Professor Serex.

103. Advanced Analytical Chemistry.—Laboratory. This course may be taken in part as follows: (a) electrolytic analysis; (b) ultimate analysis; (c) special analytical work to meet the needs of the individual student. In addition the following subjects may be taken, if desired: (d) fertilizers; (e) insecticides; (f) food analysis. Either semester. Credit, 5.

Professor Peters.

104. Advanced Physical Chemistry.—Laboratory. Measurement o the electrical conductivity of solutions; degree of ionization; ionization constants; per cent hydrolysis of aniline hydrochloride from conductivity measurements; solubility product by the conductivity method; velocity of saponification by conductivity; neutralization point by conductivity; vapor pressure determinations; transport numbers; preparation and properties of colloidal solutions; transition points by dilatometric method; heat of solution of ammonium chloride and potassium nitrate; absorption of iodine by charcoal; determination of hydrogen ion concentration. To each student separate work will be assigned. Either semester. Credit, 5.

Associate Professor Serex.

105. Advanced Organic Chemistry.—Laboratory. The preparation o compounds not included in Courses 51, 52, such as the Kolbe synthesis of salicylic acid; benzaphenone and Beckmann's rearrangement; rosaniline, malachite green, Congo red, indigo, and other dyes; synthesis of fructose; Grignard reaction. To each student separate work will be assigned. Either semester. Credit, 5.

Professor Chamberlain.

106. Advanced Biological Chemistry.—Laboratory. An intensive study of special compounds, or processes, involved in the growth or metabolism of either plants or animals, under either normal or pathological conditions. To each student separate work will be assigned. Either semester. Credit, 5.

Professor Ritchie.

111. Advanced General Chemistry. (1937–38).—Lectures and collateral reading. A general survey of fundamental theories and recent advances in analytical, biochemical, inorganic, organic and physical chemistry. First semester. Credit, 3.

The Department.

112. Thermodynamics.—A study of the application of thermodynamics to chemical problems. Second semester. To be given in 1937 and alternate years. 2 class hours. Credit, 2.

Assistant Professor Fessenden.

Prerequisites: Mathematics 28; Physics 54, or the equivalent.

113. Advanced General Chemistry. (1936–37).—Lectures and collateral reading. Similar to Course 111, but covering other phases of the different fields. First semester. Credit, 3.

The Department.

114. Seminar.—Conferences, reports, or lectures. Credit, 1 each semester.

Professor Ritchie.

175. Physical Chemistry.—Lectures and laboratory work. First semester. Credit, 5.

Associate Professor Serex.

179. Physiological Chemistry.—Lectures and laboratory work. First semester. Credit, 5.

186. Theoretical Chemistry.—3 lecture hours. Second semester.
Credit, 2.
Professor Peters.

188. History of Chemistry. Second semester.
3 class hours. Credit, 2.
Professor Ritchie.

192. Special Investigations.—A continuation of Course 92, II, for graduate students majoring in chemistry. The student will have the opportunity to continue studying the methods of research. Problems of definite character will be assigned to the student in the various fields of chemistry. It will be necessary for the student to report on pertinent literature. Both semesters. Credit determined by work done.
The Department.

200. Thesis.—Research, and, in the case of a degree, the preparation of an acceptable thesis in agricultural, analytical, organic, physiological, or physical chemistry, under the direction of the professor in charge of the work. Credit determined by work done.
The Department.

COURSES FOR MINOR CREDIT ONLY.

51, 52. Organic Chemistry.—Lectures and laboratory work. A year course. 5 credits each semester. Professor Chamberlain.

61, 62. Quantitative Analysis.—Lectures and laboratory work. A year course. 5 credits each semester. Professor Peters.

Dairy Industry.

The Department of Dairy Industry is housed in its own building, generally known as Flint Laboratory. This building is equipped with modern machinery for the production of market milk, ice cream, butter, and cheese. It has ample laboratory facilities for the carrying on of the various lines of research work of interest to students in dairy industry.

COURSES FOR MAJOR OR MINOR CREDIT.

101. History and Development of Dairying.—A review of the early history of dairying and factors in the industry contributing to its present development.
Credit, 3–5.

102. Ice Cream Problems.—A study of existing scientific, technical, and marketing problems in the field of ice cream making. Credit, 2–5.

103. Market Milk Problems.—Consideration of production, processing, and distribution of milk, the nutritional value of milk, chemical and bacteriological aspects of milk handling. Credit, 2–5.

104. Surplus Milk Problems.—The economical disposal of seasonal surpluses through cheeses, butter, milk drinks, etc. Credit, 2–5.

105. Dairy Plant Management.—The selection, construction, and arrangement of dairies and dairy machinery, and economical operation of same.
Credit, 2–5.

195. Seminar. Credit, 1 each semester.

200. Thesis.—Original research work having a bearing on some important problem in dairying. Credit, 10.

COURSES FOR MINOR CREDIT ONLY.

52. Market Milk.—A study of the various phases of the market milk industry: sanitary production, transportation, pasteurization and handling in the city plant, marketing, delivery systems, milk and its relation to public health, inspection, milk laws, food value, and advertising. Cultured milk and other milk drinks also are included. Some milk plants are visited. Credit, 4.

75. Dairy Chemistry.—The various physical and chemical properties of milk, milk products, and their components are studied. Testing and control methods commonly used commercially for milk and dairy products are included; moisture and fat determinations, casein, salt, and acid tests, work with the Mojonnier apparatus, and other applied chemical tests are taken up in the laboratory.
Credit, 3.

77. Butter and Cheese Making.—The first half of the semester is devoted to butter making, the remainder to cheese making, condensed and powdered milks. The various phases of the butter industry studied are: separators and cream separation; pasteurization, neutralization, and ripening of cream, preparation of starter cultures; churning, marketing, and scoring of butter; creamery management. The work in cheese making includes cheddar, cream, Neufchatel, cottage, processed cheeses, etc. The manufacture of condensed and powdered milk, and commercial casein is also covered. Credit, 5.

78. Ice Cream Making.—The course includes a study of the principles and practices of ice cream making. The effects of such factors as composition, quality, pasteurization, homogenization, aging, and freezing on the finished product are considered. Sherbets, ices, fancy and individual forms, and all flavors of ice cream are studied. Some time is devoted to refrigeration machinery, delivery equipment, and merchandizing methods as they are related to the industry.
Credit, 4.

79. Seminar.—The course consists of a study of research done by the experiment stations, also a review of foreign literature. Students prepare papers on timely dairy subjects. Frequent addresses are made to the class by visiting authorities in dairying. Credit, 1 each semester.

Economics.

COURSES FOR MAJOR OR MINOR CREDIT.

110. Advanced Economic Theory.—A study of the classical and nonclassical theories of value and distribution. Analysis of fundamental concepts and the relation of these to current problems of production, distribution and exchange.
Credit, 3.
Assistant Professor Gamble.

111. History of Economic Thought.—A general study of the development of economic thought from its ancient beginnings; the contributions of the various schools; recent changes in economic history. Credit, 3 each semester.
Assistant Research Professor Rozman.

112. Business Fluctuations.—A study of business fluctuations and an analysis of the current business cycle theories. Credit, 3.
Assistant Professor Gamble.

113. Central Banking.—A study of the organization and policies of the major central banks with special reference to the Federal Reserve System.
Credit, 3.
Assistant Professor Gamble.

114. Public Finance.—A study of the principles underlying public expenditures, public borrowing and taxation. Credit, 3.
Assistant Professor Gamble.

115. Current Economic Problems and Literature.—Department seminar throughout the year. Credit, 1–3 each semester.

125. Applied Economics.—A course offered primarily for high school teachers (others may elect), which is intended to appraise such current economic questions as the business cycle, taxation, banking, international trade reparations, economic planning, and similar problems in the light of economic principles.
Credit, 2–3 each semester.
Assistant Professor Gamble.

131. Problems of Production.—A presentation of the industrial relationships and the principles upon which the production of economic goods is based.
Credit, 3–5.
Professor Cance.

140. Principles and Problems of Land Economics.—This course deals principally with the characteristics and classification of land, present and future uses of land, private property and the control over property, land income and the value of land. Credit, 2–3.
Assistant Research Professor Rozman.

145. Labor Problems.—Reading and investigation. By arrangement.
Credit, 3.
Assistant Professor Gamble.

155. Marketing and Marketing Problems.—A study of the forces and conditions which determine prices and the mechanism, methods, and problems concerned with transportation, storing and distributing goods. Credit, 3.
Professor Cance.

160. Public Utilities and Their Regulation.—The study will include the problem of social control of monopolies and industries affected with a public interest. Credit, 2–4.
The Department.

166. Principles of Transportation.—The development of highway, waterway, and railway transportation, and its relation to the development of the country; the principles governing the operation and control of transportation agencies; present-day problems. Lectures, text, and field work. Credit, 3.
Professor Cance.

167. Specific Transportation Problems.—Original study, reading, and reports on certain transportation problems related to agriculture. Alternate years, odd. Credit, 3–5.
Professor Cance.

170. The Fundamentals of Cooperation.—History, principles and business relations. (1) A survey of the development, methods, and economic results of great cooperative movements; (2) the organization of producers and consumers abroad, and the present aspects and tendencies in the United States; (3) the principles underlying successful cooperative endeavor and practical working plans for cooperative associations. Credit, 3.
Professor Cance.

171. Special Problems in Cooperation for Economic Purposes.—Study, original investigation, and discussion. Every third year, beginning 1933.
Credit, 3–5 each semester.
Professor Cance.

174. Advanced Business Accounting.—This course covers the problems of corporation accounting and accounting for cooperative organizations. Considerable time is spent on problems in amortization, depreciation, and the preparation, analysis and interpretation of financial statements. Credit, 3.
Mr. Larcom.

185. Economic Institutions and Practices in Relation to the State.—Studies in farm relief measures, taxation, bounties, subsidies, government control of commerce and industry. Credit, 2–5 each semester.
Professor Cance.

190. Investigations in Various Problems Related to Economics.—Credits to be determined by time spent and reports submitted.

200. Thesis.—Research work in economics will be developed by four principal methods; namely: historical, statistical, accounting, and general field investigation. In all instances mastery of research methods includes facility in investigation, tabulation, and interpretation of results.

COURSES FOR MINOR CREDIT ONLY.

54. Corporation Finance.—Types of business organization. Types of securities used for raising capital. Financial structure of various types of concerns. Administration of income-control; holding company finance; and current control legislation are considered. Credit, 3.

Assistant Professor Gamble.

55. Economics of Consumption.—The purpose of this course is a consideration of the importance of consumption in modern industry and commerce. It includes a study of the laws of consumption, standards of living, sources and factors determining family incomes, and of the administration of these incomes as shown by the expenditures of the nation and of various groups. The relation of consumption to the problems of population and to the development of society is also studied. Lectures, assigned readings, and class discussions. Credit, 3.

Mr. Larcom.

77. Economics of Foreign Trade.—A study of the principles and practices of international trade, including a survey of historical trends of the foreign trade of the United States, particularly with reference to agricultural products; the business methods of foreign traders, foreign exchange. Textbook, lectures, class discussion and class trip to Boston at an estimated expense of twelve to fifteen dollars. Credit, 3.

Assistant Professor Gamble.

81. Elementary Business Accounting.—This course aims to give the student an elementary working knowledge of the principles underlying the accounting system in the gathering, analysis, and interpretation of accounting data and the methods used in accounting and preparing the usual types of business statements for individual proprietorship businesses and partnerships. The use of accounting records as a means of business control, which is emphasized in the course, should be of special value to those students who will later be employed in managerial capacities. Credit, 3.

Mr. Larcom.

85. Business Law.—Land, titles, public roads, contracts, commercial paper, and distinctions between personal and real property. Text, written exercises, lectures, and class discussions. Credit, 3.

Mr. Smart.

Education and Psychology.

COURSES FOR MAJOR OR MINOR CREDITS WITH MAJOR ENROLLMENT IN EITHER GROUP OF SUBJECTS.

Education.

Courses for satisfaction of a minor may be selected from the undergraduate list in the annual college catalogue, except those numbered 26 and 65, provided prerequisites have been satisfied.

102. The Development of Public Education in Massachusetts.—The origin and growth of all types of education under public control from earliest colonial days to the present, with legislation, policies and persons involved.

By arrangement. Credit, 2–3.

Professor Welles.

103. Problems in Vocational Teaching.—The course deals with problems out of the experiences of vocational teachers in Massachusetts. Constructive assignments bearing upon individual experiences are worked out in harmony with the campaigns for better teaching in vocational schools. Credit, 2–3.

By arrangement.

F. E. Heald of Vocational
Division, State Department of Education.

104. Principles of Vocational Education.—A survey of the objectives, history and legal requirements of vocational education in the United States.

Credit, 2–3.
By arrangement.
F. E. Heald of Vocational
Division, State Department of Education.

105. Organization and Administration of Secondary Education.—This is a study of all phases of public school work from the side of the administrator and teachers in a system. Credit, 2.

By arrangement.
Professor Welles.

107. Rural and Elementary Graded Schools.—The place rural education still occupies, changes in process, introduction of arts, health programs, curriculum, etc. The problems of principal of graded school, staff, transportation, lunches, vocational program, extracurricular matters, community relations, etc.

Credit, 2–3.
Professor Welles.
Mr. Purvis.

110. Contemporary Education.—Comparative studies of education involving European and United States systems. Interviews, reading, reports.

Credit, 2–3.
By arrangement.
Mr. Purvis.

120. School Laws of Massachusetts.—A review of the legal relations of the school personnel covering the usual experiences in school and community, presented in a series of selected cases having the support of court decisions.

Credit, 2.
By arrangement.
Professor Welles.

137. Socialized Education.—Discussion of the objectives and the various factors involved in a system of education for increasing its social values. A view of education that tries to offset the effects of present idea of individualism.

Credit, 3.
By arrangement.
Professor Welles.

145. Conflicting Principles in Teaching.—A critical analysis of many dualisms in teaching principles in which there is an apparent conflict between two sound ones and an attempt to find the best way to capitalize the good of both.

Credit, 2.
Professor Welles.

167. History of Education.—A survey of educational objectives and practices extending from early times to the present, emphasizing those movements that have most definitely influenced education in many countries.

Credit, 3.
By arrangement.
Mr. Purvis.

178. Apprentice Teaching in Agriculture.—An opportunity offered occasionally to study this type of vocational education by participating in it. The work is that of an assistant teacher under supervision with a schedule of classes to teach and a prescribed line of study to complete. For one or two full semesters off campus. Credit, 3–6.

By arrangement.
Professor Welles.
Assisted by F. E. Heald of the Vocational
Division, State Department of Education.

179. Educational Tests and Measurements.—The most serviceable tests and scales for measuring school achievement are considered; construction, administration, and interpretation and uses of results are studied and practiced.

Credit, 3.
Mr. Purvis.

181. Curriculum Construction in Secondary Schools.—A study of the principles and techniques involved in curriculum building. Recent programs will be studied and evaluated. Readings and reports. Credit, 2–3.

By arrangement.
Mr. Purvis.

182. Problems in Secondary School Administration.—A series of problems covering important phases of secondary school administration taken from actual situations in schools. These are to be worked out in detail in writing. Assigned readings are indicated to aid in the solution of the problems. Credit, 3.

By arrangement.
Mr. Purvis.

183. Seminar in Education.—Content determined on basis of experience and needs of students. Designed to cover important phases of school work not fully treated in listed courses. Examples: classroom management, supervision, general and special curriculum studies, special subject methods, school finances, school housing, secondary education, etc. Credit, 1.

By arrangement.
Professor Welles and Mr. Purvis.

184. Secondary Education.—The course gives attention to the aims, relations, organization, and functions of the high school and the activities that carry these out through curricula, schedules and extra-curricular organizations.

Credit, 3.
Mr. Purvis.

191. Educational Research and Statistics.—The principles and methods of research with special emphasis upon the technique used in education and psychology. Statistics are studied chiefly from the standpoint of reporting and understanding the results of research. Required in first semester of students who anticipate completion of a thesis in the current year.

Credit, 3.
Mr. Purvis.

200. Thesis.—A completed piece of work on an accepted educational problem with necessary review of literature in its field. Required of all students for the advanced degree. (Prerequisite 191.) Credit, 7–10.

By arrangement.
Professor Welles and Mr. Purvis.

Psychology.

151. Experimental Psychology.—A survey of important experiments in psychology. Special attention is given to the techniques of experimentation and to the apparatus employed. The content of the course is determined partly by the interests of the members of the class.

Credit, 3.
Assistant Professor Neet.

153. Survey of Psychology.—A survey of the present status of the fields, schools, and major problems of psychology. The principal methods of psychological research are outlined. Credit, 3.

Assistant Professor Neet.

154. Educational Psychology.—This course deals with the psychological theories involved in the solution of various educational problems. An attempt is made to criticize and evaluate educational theory and practice in this light.

Credit, 3.
By arrangement.
Professor Glick.

164. Seminar in Psychology.—Arranged to include phases of psychology not covered in the outlined courses and also to provide opportunity for greater specialization than the outlined courses may afford. Credit, 1.
By arrangement.
Professor Glick and Assistant Professor Neet.

185. Abnormal Psychology.—A study of the different types of disorders in human behavior relative to causes, classification, prevention, and treatment. A critical study is made of the various theories and practices of mental hygiene and psychiatry. Credit, 3.
Assistant Professor Neet.

186. Child Psychology.—A study of child and adolescent behavior with special reference to the problems of teachers and parents. Credit, 3.
Assistant Professor Neet.

189. Psychology of Guidance.—A study of the various factors involved in guidance programs in general. Interests, attitudes, and general personality tests are studied, and the psychological devices for measuring these are also considered and applied. Practice is given in administering and scoring tests, and statistical devices are used to interpret results. Credit, 3.
Professor Glick.

193. Theory of Mental Tests.—A critical study of the various types of tests from the psychological, philosophical, and practical points of view. Credit, 2.
By arrangement.
Professor Glick.

195. Problems in Psychology.—Affords an opportunity for study in any special field of psychology. Credit, 2.
Professor Glick and Assistant Professor Neet.

200. Thesis.—In psychology. Credit, 10.
Professor Glick and Assistant Professor Neet.

Philosophy

161. History of Philosophy.—A study of the development of Western thought in general from the time of the early Greeks up to the recent past.
Credit, 3.
Professor Glick.

162. Fundamentals of Philosophy.—A study of the various current types of philosophy with emphasis upon evaluation and criticism. Credit, 3.
Professor Glick.

163. Philosophy of Education.—A criticism and evaluation of the various theories and practices in education viewed in the light of historical perspective and present-day science and theory. Credit, 3.
By arrangement.
Professor Glick.

164. Ethics.—A critical study of the fundamental ethical theories and practices both of the past and present, with an attempt to evaluate each in the light of present knowledge and social demands. Credit, 3.
Professor Glick.

197. Seminar in Philosophy.—Arranged to include phases of philosophy not covered in the outlined courses and also to provide opportunity for greater specialiation than the outlined courses may afford. Credit, 1.
By arrangement.
Professor Glick.

198. Problems in Philosophy.—The subject matter centers around logic and deals primarily with various methods of investigating truth. Credit, 3.
Professor Glick.

Entomology, Zoölogy and Geology.

COURSES FOR MAJOR OR MINOR CREDIT.

Entomology.

The credits for the courses listed range in number from 1 to 4.

101. Insect embryology; polyembryony; parthenogenesis, paedogenesis, heterogeny. Professor CRAMPTON.

102. Advanced insect morphology. Professor CRAMPTON.

103. Ancestry and development of insects, including fossil forms. Professor CRAMPTON.

104. Advanced insect histology and physiology. Assistant Professor SWEETMAN.

105. Animal luminosity; chemistry and physics of insect colors. Assistant Professor SWEETMAN.

106. Variation in insects; dimorphism and polymorphism; teratology, hermaphroditism and gynandromorphism; hybrids. Professor ALEXANDER.

110. Mimicry; relation of insects to plant pollination; insect behavior. Professor CRAMPTON.

111. Insect architecture; insect products of value to man. Professor CRAMPTON.

112. Geographic distribution of animals, with particular reference to insects; insect migrations. Professor ALEXANDER.

113. Advanced biological control of insects and weeds. Assistant Professor SWEETMAN.

114. Advanced animal ecology. Assistant Professor SWEETMAN.

115. Chemical, cultural, and mechanical control of insects. Assistant Professor SWEETMAN.

116. Insect photography and methods of preparing illustrations. Assistant Professor SWEETMAN.

117. Field and laboratory methods in entomological research. Assistant Professor SWEETMAN.

118. Legislation regarding insects and insecticides. Assistant Professor SWEETMAN.

125. History of entomology and classifications. Professor CRAMPTON.

126. Lives and works of prominent entomologists. Professor ALEXANDER.

127. Abundance of insects; important public and private collections. Professor ALEXANDER.

128. Type categories; genotypes; types of species; leading specialists in the various orders of insects. Professor ALEXANDER.

129. The international code of zoological nomenclature and the opinions delivered thereon. Professor ALEXANDER.

180. SEMINAR.—Reports on the current literature of entomology; special reports by resident and visiting speakers.

190. ADVANCED AND COLLATERAL READINGS.—The best articles on various topics in entomology are assigned for study, and the subjects are included in the final examinations.

200. THESIS.—Original work on one or more topics in morphology, ecology, applied or systematic entomology. This requires from one-half to two-thirds of the total working time of the student in his major field.

COURSES FOR MINOR CREDIT ONLY.

Entomology.

52. Forest Entomology. Credit, 3.
53, 78. Applied Entomology. Credit, 2 each semester.
54. Medical Entomology. Credit, 4.
55, 56, 76. Insect Taxonomy. Credit, 2–7.
57. Insect Morphology. Credit, 3.
65, 85, 86. Apiculture. Credit, 3 per course.
79, 80. Insect Ecology. Credit, 3 each semester.
81. Insect Physiology. Credit, 3.

Zoölogy.

65, 66. Comparative Vertebrate Zoology. Credit, 3 each semester.
69, 70. Comparative Invertebrate Zoology. Credit, 3 each semester.
75, 76. Vertebrate Embryology. Credit, 3 each semester.
91. Special Problems. Credit, 5.

Geology.

52. Descriptive and Determinative Mineralogy. Credit, 3.
61. Elements of Petrology. Credit, 3.
62. Historical Geology. Credit, 3.
101, 102. Special Problems. Credit, 3 each semester.

Floriculture.

COURSES FOR MAJOR OR MINOR CREDIT.

A definitely outlined major or minor in floriculture is not catalogued at present but such a course may be arranged for individual students. The nature of the work to be taken up will depend upon the previous training and the type of problem desired by the candidate. Application should be made to the head of the department.

150. Current Literature.—A review of scientific literature relating to floricultural practices, including various phases of greenhouse management, soils, fertilizers, plant propagation, insect pest and disease control, and other pertinent subjects. Credit, 3.

125. Garden Materials.—Studies of specific plants or groups of plants which are used in gardening work. Questions concerning nursery methods of handling such plants are also included. Credit, 3.

175. Commercial Floriculture.—Problems relating to factors concerned with the commercial production of flowers and plants under glass. Opportunity is also given for study of factors concerned with methods of distribution. Credit, 3.

179. Conservatory Plants.—A consideration of subjects dealing with plant materials which are used primarily in conservatories for display purposes and in gardens in warmer climates. Credit, 3.

190. History of Floriculture and Floricultural Literature.—Consideration of men and events that have influenced the development of floriculture. Brief survey of floricultural literature. Required of all graduates in floriculture. Credit, 3.

200. Thesis.—For candidates taking major work in floriculture. Credit, 10.

COURSES FOR MINOR CREDIT ONLY.

51. Greenhouse Management. Credit, 3.
52. Floral Arrangement. Credit, 3..
75. Commercial Floriculture. Credit, 3 each semester

79. Conservatory Plants. Credit, 2.
81. Herbaceous Gardens and Borders. Credit, 3.
82. Seminar. Credit, 3.

Forestry.

COURSES FOR MINOR CREDIT ONLY.

59. Forest Economics.—The use of land for forest purposes in New England with special reference to the recreational and esthetic aspects of such use. Individual problems with conferences and assigned readings.
Credit, 3.

60. Forest Management.—A study of the small unit forest in New England with special reference to the determination of the volume and value of the growing stock and its proper utilization. Individual problems with conferences and assigned readings. Credit, 3.

61. Forest Improvement.—A study of the intermediate cuttings and other practical silvicultural methods applicable in the improvement and renovation of New England forest stands. Field work, conferences and assigned readings.
Credit, 3

62. Forest Utilization.—A study of the uses of wood with special reference to the tree species of New England. Field problems, conferences, assigned readings.
Credit, 3.

65. Principles of Wildlife Conservation.—This is designed as an orientation course for any student in the College who wishes to get a broad view of the subject. It will cover a general review of the history of the administration of wildlife resources as well as an introduction to the various biological and economic and legal problems involved in the handling of wildlife. The course will consist of lectures, reports and discussions. A term paper on some present wildlife problem will be required. Credit, 2.

70. Life History of Wild Animals.—A quantitative study of the life requirements of game animals or of animals used as food or competing for the food of game animals. Credit, 3.

71. Wildlife Surveys.—A quantitative study of the abundance, annual yield and ecological relationships of wild animals. Credit, 3.

72. Nutrition of Wild Animals.—A quantitative study of the food habits and nutritional requirements of wild animals. Credit, 3.

73. Problems in Aquaculture.—A study of the factors involved in the management of water resources. Credit, 3.

History and Sociology.

History.

COURSES FOR MINOR CREDIT ONLY.

151. Forms and Theories of Government.—Theories of the origin and development of the state; history of the governments of Great Britain, France, Germany, Italy, and Spain as typical of the governments of western Europe; an examination of the constitutional governments recently set up in Europe.
Credit, 3.
Professor Mackimmie.

152. Modern European History.—A comprehensive view of the history of Europe as a whole from the Renaissance to the French Revolution with a more intensive study of certain selected periods. In this second aspect attention will be focused on social, intellectual, political, agricultural and economic elements which have entered into the development of civilization. Credit, 3.
Professor Mackimmie.

153. Contemporary Civilization.—Continues and completes the studies begun in Course 152. The general history of Europe from Napoleon to the close of the World War. Credit, 3.
Professor Mackimmie.

155. History of American Foreign Policy.—A study of the chief problems in American diplomatic relations and the traditional policies evolved. Credit, 3.
Mr. Cary.

160. The United States Since the Civil War.—An historical treatment of the political, economic, social and intellectual development in recent years. A previous course in United States history is required for admission. Credit, 3.
Mr. Cary.

176. The History of the Renaissance.—The later Middle Ages. The Church at the height of power. The rise of nationalities. The Italian Towns. The New Learning and its relation to Art, Science, Invention, Geographical Discoveries. Spread and effects of the Renaissance. Credit, 3.
Professor Mackimmie.

Sociology.

COURSES FOR MAJOR OR MINOR CREDIT.

154. Civilization and Culture.—A study of human social and cultural development, including agricultural, with reference to the sources of our knowledge; attention is given to the results of recent scholarship in this field. Credit, 5.
Assistant Professor Cutler.

175. Social Reforms.—An appraisal of present-day efforts to adjust our social conditions, in country and city, to the situation created by the industrial revolution; a study is made of recent literature on this subject. Credit, 5.
Assistant Professor Cutler.

177. Sociological Field Work.—Students, under direction of the instructor, analyze and organize such sociological knowledge as they acquire through their own social service experience, and include all in a comprehensive report; projects must be approved in advance by the instructor. Credit, 3.
Assistant Professor Cutler.

178. Sociological Research.—A study of the methods of research employed by sociologists and of the logical and mathematical analysis to which the latter subject their findings; social case work is explained; phases of social theory are defined. Credit, 3.
Assistant Professor Cutler.

179–180. Seminar.—The seminar described under Sociology 79 and 80. Graduate students render reports on research in which they engage, and upon selected portions of current sociological literature. The reports serve as the basis for general discussion. Credit, 2.
Professors Mackimmie and Cutler.

182. American Standards of Living.—A study of the relations of life to people's ideals and income. Credit, 3.
Assistant Professor Cutler.

183. Social Conditions of Old World Life.—A sociological investigation of life in Europe, the Orient, and the Far East; co-operative enterprise in Denmark; agriculture in China after one hundred twenty generations; racial traits. Credit, 3.
Assistant Professor Cutler.

187. Town and Village Life.—The agricultural village; the small town in relationship to its environing neighborhoods; rurbanization; part-time farming. Credit, 3.
Assistant Professor Cutler.

188. The Modern City.—A survey of industrial and mercantile centers with their problems of poverty, health and sanitation, planning and zoning, the "unearned increment," and disrupted primary groups; the social, administrative and economic organization of cities; metropolitan planning. Credit, 3.
Assistant Professor Cutler.

189. Utopias and Other Social Movements.—A study of utopias in literature and in fact; the literature of rural life; contemporary social movements.
Credit, 3.
Assistant Professor Cutler.

190. Local Government.—Proposed improvements in local government.
Credit, 3.
Assistant Professor Cutler.

191. Community Leadership.—Qualities and methods making for successful leadership. Credit, 3.
Assistant Professor Cutler.

192. Social Conditions in the Caribbean Region.—A sociological study of life and industry in the American possessions and protectorates; relation of the West Indies to the United States; the peon mind. Credit, 3.
Assistant Professor Cutler.

193. The League of Nations.—Social and agricultural problems in their international aspects. Credit, 3.
Assistant Professor Cutler.

200. Thesis.—Upon an approved subject, and must be a valuable contribution to knowledge. Especial stress is laid upon the feature of originality in the case of candidates for the doctorate.
Credit, for master's degree, 10; for doctor's degree, 30.

Home Economics.

COURSES FOR MAJOR OR MINOR CREDIT.

101. Problems in Nutrition.—Adapted to meet the interests and needs of individual students. These studies might include an application of the principles of chemistry, psychology and physiology to nutrition; child nutrition, dietotherapy, nutrition in relation to health education. Credit, 5.

111. Nutrition Seminar.—A review of current literature on selected subjects and the preparation of bibliographies and special reports by the students.
Credit, 1 each semester.

200. Thesis.—Individual research in the field of nutrition and the preparation of an acceptable thesis reporting results and analysis of such studies.
Credit, 10.

COURSES FOR MINOR CREDIT ONLY.

75. Home Management.—A study of personal and family standards of living in the modern home, the economic relations of the household, and the use of time, energy, and money as a means to influence the home situation. Credit, 3.

83. Problems in Home Economics.—An application of home economics to special problems. Credit, 3 each semester.

86. Child Development.—A study of the growth and development of the child, the care of children at various ages, treatment in behavior problems, and the influence of environment in shaping personality. Credit, 3.

87. Advanced Clothing Problems.—A study of advanced clothing problems with special emphasis on economic problems involved. Costume designing and modeling are included which give opportunity for experimentation in designing.
Credit, 3.

89. Diet Therapy.—This course offers a brief outline of the causes, symptoms, and general treatment of the various diseases in which the nutritional condition of the patient has significance. The course includes the dietetic treatment and control of gastrointestinal disorders, obesity, cardio-vascular-renal diseases, anemia, fevers, diabetes, food allergy and the deficiency diseases. Field trips are planned to the dietetic departments of nearby hospitals.
3 class hours. Credit, 3.
Prerequisite, Home Economics 52; Chemistry 79.

Horticultural Manufactures.

COURSES FOR MAJOR OR MINOR CREDIT.

101. Food Industry Problems.—A series of problems, exercises and assignments covering a wide variety of subjects. Definite credit is assigned to each problem. Credit, 5.

111. Seminar.—Literature assignments, preparation of reports, and round-table discussions. Credit, 1 each semester.

161. Food Technology.—Commercial practices. Advanced laboratory work in the manufacture of canned meats, marine products, vegetables, soups, pickled products, maple and table syrups, fountain syrups and carbonated beverages. Two 3-hour laboratory periods. Credit, 3.

162. Food Technology.—Commercial practices. Advanced laboratory work and lectures on such manufactured fruit products as jellies, jams, marmalade, pectin, juices and by-products. A study of chemical preservatives in foods. Food laws. Fermented foods and beverages. Refrigeration, freezing, drying and smoking as applied to food preservation and storage. One lecture, one 3-hour and one 2-hour laboratory period. Credit, 3.

175. Examination of Food Products.—Factory and laboratory methods. Grades and quality factors; physical, chemical, microbiological and microscopical methods and interpretation of results.
1 4-hour laboratory period. Credit, 2.

132. Confections and Special Products—Candied and glacéd fruits, and preserves; candies; sugars and accessory preserving materials. Credit, 2.

200. Thesis.—Research on some suitable topic relating to the technology of foods. Facilities for nutrition research are provided by well-equipped chemical and small animal laboratories. Credit, 10–15.

COURSES FOR MINOR CREDIT ONLY.

51. Fruit and Vegetable Products.—This course, together with 52, gives the student a general elementary knowledge of the science and practice of food manufacture. Principles and theories of the various methods of food preservation are the basis for classroom exercises. The laboratory work during the first semester deals largely with the preservation of the autumn fruits and vegetables, small fruit products, freezing and dehydration.
1 class hour. 2 2-hour laboratory periods, credit, 3.

52. Miscellaneous Products.—This is a continuation of 51. The laboratory work includes pickles and pickle products, maple products, citrus products, fruit syrups, soups, condiments and the canning of meats, poultry, and the spring vegetables.
1 class hour. 2 2-hour laboratory periods, credit, 3.

61. Commercial Practices.—A survey of commercial practices in the manufacture and preservation of food products. This will involve a study of equipment, factory arrangement, sanitation and government regulations, the operation of types of commercial equipment in quantity production.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Prerequisites Horticultural Manufactures 51 and 52.

62. Food Preservation Problems.—This is a continuation of 61. The class exercises will deal largely with a survey study of the sources of raw materials, commercial methods of manufacture, packing and distribution of the more common foods, also a study of the more important contributions of research. Laboratory work will include the formation of research projects, interpretation of research data. The use of preservatives, the simple analysis of foods and the commercial practices as applied to preservation of such materials as are available: fish, meats, poultry, and spring vegetables.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Prerequisite Horticultural Manufacture 61.

Landscape Architecture.

COURSES FOR MAJOR OR MINOR CREDIT.

175. Theory of Landscape Architecture. Credit, 3.
Professor Waugh.

176. Civic Art. Credit, 3.
———.

178. History of Architecture. Credit, 3.
Professor Harrison.

181. Advanced Design. Credit, 3.
———.

182. Residence Grounds Design. Credit, 3.
Professor Harrison.

183. Construction and Maintenance. Credit, 3.
Professor Harrison.

190. Theory.—Special studies in the history and theory of art and of landscape architecture. Credit, 2–5.
The Department.

191. Design.—Individual problems in any or all branches of design, including estates, parks, playgrounds, public grounds, etc. Credit, 2–5.
The Department.

192. Construction.—Individual problems by arrangement, including engineering, estimating, cost accounting, and methods of construction. Credit, 2–5.
The Department.

194. Practice.—Professional field work under supervision, conducted upon going projects as opportunity offers. Credit, 2–5.
By arrangement.
The Department

195. Seminar.—Regular meetings for conference. Credit, 1.
Professor Waugh.

196. Presentation.—Studies in drafting, pen and crayon, rendering, water coloring, etc. Credit, 2–5.
Mr. Robertson.

197. Architecture.—Problems in architecture. Credit, 2–5.
Mr. Robertson.

198. Civic Art.—Studies and problems in civic art, including city planning, country planning and subdivision, public policies, and administration in park and forest recreation, and landscape conservation. Credit, 2–5.
Professor Waugh.

200. Thesis. Credit, 10.

COURSES FOR MINOR CREDIT ONLY.

51. Mapping and Topography. Credit, 3.
Professor Harrison.

52. Elements of Landscape Architecture.—Engineering details, grades, roads, drainage. Credit 3.
Professor Harrison.

54. Garden Design.—Elementary principles of structural design as applied to the simpler garden forms. Credit, 3.
Professor Waugh.

FOR THE DEGREE OF BACHELOR OF LANDSCAPE ARCHITECTURE.

To receive the degree of Bachelor of Landscape Architecture each candidate will be required:

1. To have received the degree of Bachelor of Science or Bachelor of Art from a reputable institution.

2. To have completed as a prerequisite 24 semester credits in technical courses in landscape architecture, substantially equivalent to the technical courses now required in the major in landscape architecture at this college.

3. In addition, to have completed in residence at this institution 30 credits in landscape architecture and closely related subjects prescribed by the department. (See Fifth Year Program below.)

4. To have maintained a standing of 70 or better in all courses of the Fifth Year.

5. To be able to speak and write good English.

6. To have received the unanimous approval of the faculty of the department and the usual vote of approval of the faculty of the Graduate School.

FIFTH YEAR PROGRAM.

The regular program of studies for the Fifth Year, subject to minor changes, is as follows:

First Semester.

LANDSCAPE ARCHITECTURE 101.—General Design. Professor BLUNDELL.

LANDSCAPE ARCHITECTURE 102. Ecology and Physiography. Professor WAUGH.

LANDSCAPE ARCHITECTURE 107. Specifications, Estimates, Costs. Professor HARRISON.

LANDSCAPE ARCHITECTURE 109. Landscape Sketching (Elective). Professor ROBERTSON.

ARCHITECTURE 101. Elementary Problems. Professor ROBERTSON.

ENGLISH. Assigned.

Second Semester.

LANDSCAPE ARCHITECTURE 102.—Landscape Forestry. Professor HOLDSWORTH.

LANDSCAPE ARCHITECTURE 106.—General Design. Professor HARRISON.

LANDSCAPE ARCHITECTURE 112.—Professional Practice. Professor WAUGH.

LANDSCAPE ARCHITECTURE 114.—Architectural Sketching (Elective). Professor ROBERTSON.

ARCHITECTURE 102.—Structural Problems. Professor ROBERTSON.

English, Assigned.

Note. Each course in this group is rated at 3 semester credits. Minor deviations from this program may be made at the discretion of the department.

Mathematics.

COURSES FOR MINOR CREDIT ONLY.

75. HYDRAULICS.—Hydrostatics, which deals with pressure gages, pressures on surfaces and immersed and floating bodies, is first considered. Hydrokinetics, which includes flow through orifices and tubes, over wiers and dams, through pipes and open channels, is dealt with next. Hydrodynamics, which considers turbines and pumps, will be taken up briefly. Where possible current practical problems in hydraulics such as flood control, hydro-electric power development and erosion control are discussed during the class period.

3 class hours. Credit, 3.

Prerequisite, Physics 25, Mathematics 28. Mr. MARSTON.

76. WATER SUPPLY.—This course considers the engineering aspects of public water supply systems and includes the following topics: quantity of water required; sources of supply; rainfall; evaporation and percolation; flow of streams; ground water; quality of water supplies; water-works construction; intake works; dams; methods of purification; distribution systems.

3 class hours. Credit, 3.

Prerequisite, Mathematics 75 or permission of instructor. Mr. MARSTON.

91, 92. Differential and Empirical Equations.—Courses dealing with the methods of solution of the simpler forms of differential equations and their applications to analogous operations in the applied sciences. Attention is also given to the various methods of determining empirical equations from observed data, and the interpretation of the various constants involved.
Prerequisite, Mathematics 51. Credit, 2 each semester.
Associate Professor Moore.

55. Mathematics of Finance.—The mathematical principles of simple and compound interest, annuities, depreciation, valuation of bonds, insurance, building and loan associations. The development and application of aids to computation in problems arising from financial transactions.
3 class hours. Credit, 3.
Prerequisite, Mathematics 1. Assistant Professor Miller.

62. Statistics.—The fundamental mathematical principles of statistical analysis. A discussion of averages, measures of dispersion, frequency and probability functions, correlation, random sampling. This course in conjunction with Agricultural Economics 79 should provide the student with a good understanding of the application of statistical method and the interpretation of results.
3 class hours. Credit, 3.
Prerequisite, Mathematics 51. Mr. Boutelle.

Physical Education.

COURSES FOR MINOR CREDIT ONLY.

Men.

155. History and Purposes of Physical Education.—A study of the history of the development of the various systems of physical education and of the aims and ideals of present-day physical educators.
Credit, 2.
Professor Gore.

156. Organization and Administration.—Considers the organization and administration of a department of physical education. Credit, 2.
Professor Gore.

171. Special Problems Course in Physical Education.—Presentation and discussion of research work in physical education, health education and athletics.
Credit, 3 each semester.
The Department.

174. Recreation Organization and Administration.—A study is made of the executive and administrative problems arising out of the conduct of a community-wide recreation program, leisure surveys, supervision of recreational areas, park recrea ion problems, program making, community centers and the lay-out and equipment of play facilities. Credit, 3.
Professor Gore.

177. Anatomy General.—A course in structural anatomy, including bones, ligaments, muscles, circulation, digestion, nervous system and respiration.
Credit, 3.
Professor Radcliffe.

178. Anatomy Applied.—A course in applied anatomy or kinesiology aimed to give the anatomical knowledge and application basal to a thorough understanding of the mechanical problems in apparatus, athletic and corrective exercises.
Credit, 3.
Professor Radcliffe.

Physics.

COURSES FOR MINOR CREDIT ONLY.

51, 52. Magnetism, Electricity, Photo-Electricity, Thermionics, and Application.—Course 51 deals largely with direct currents, Course 52 with alternating currents, applications of thermionics, and photo-electricity. These courses

are planned to give the student a good grounding in theory and methods of measurement in the subjects indicated, which are useful in many fields of investigation. Modern methods are stressed and instruments of precision are used.

2 class hours. 1 2-hour laboratory period, credit 3 each semester.
Professor POWERS.

Prerequisites, Physics 26 for Course 51; Physics 51 for Course 52, Math. 28.

53. OPTICS.—An intermediate course in the theory of light. Work in geometrical and physical optics is done. Precision instruments are used in the laboratory.

2 class hours. 1 2-hour laboratory period, credit 3.
Assistant Professor ALDERMAN.

Prerequisites, Physics 26, Math. 28.

54. HEAT AND THERMODYNAMICS.—A study of heat exchanges and energy changes due to heat in systems of matter. The subject material and experimental methods are useful in other branches of science.

2 class hours. 1 2-hour laboratory period, credit 3.
Assistant Professor ALDERMAN.

Prerequisites, Physics 25, Math. 28.

75, 76. ADVANCED EXPERIMENTAL WORK IN SELECTED TOPICS.—These courses are largely experimental, and the subject matter is adapted to the needs of the individual student. The research viewpoint is emphasized.

3 2-hour laboratory periods, credit 3 each semester.
Professor POWERS.

Prerequisites, Physics 25, 26, and 52; or 53 and 54; Math. 28 and 51.

85, 86. MODERN PHYSICS.—Typical subjects studied are theories of the atom, radiation, quantum theory, spectra, X-ray analysis.

3 class hours. Given at option of instructor. Credit, 3 each semester.
Professor POWERS.

Prerequisites, Physics 25, 26, 51–54; or equivalent; Math. 28, 51.

Pomology.

COURSES FOR MAJOR OR MINOR CREDIT.

101. EXPERIMENTAL METHODS.—A critical study of the methods of research that have been used or may be helpful in pomological work. The following topics will be considered from the point of view of the investigator in pomology:—

1. Statistical methods.
2. Measures of growth and yield.
3. The conduct of plot experiments.
4. Methods of soil study in their relation to pomological research.
5. Chemical methods of pomological research.
6. Methods of physiology applicable to fruit plants.
7. Microchemistry.

Credit, 10.

102. POMOLOGICAL RESEARCH.—A critical survey of past and current research work in pomology. Semi-weekly meetings for reports and discussions will be held. The following topics will be taken up:—

1. Orchard soil management.
2. Soil fertility and fertilizers.
3. Physiology of pruning tree fruits and bush and vine fruits.
4. Fruit bud differentiation.
5. Sterility and fertility.
6. Genetics of fruit plants.
7. Climatology and winter injury.
8. Advanced morphology.
9. Spraying machinery and equipment.
10. Special practices.

Credit, 10.

103. Advanced Laboratory Work.—Each student will be required to become familiar with the research work of the department and to have a share in it. So far as this has value as graduate work, he will receive credit. Credit, 5.

104. History of Pomology.—The men, institutions, and other influences that have contributed to the development of the science and art of pomology. Credit, 2.

105. Horticultural Taxonomy.—A study of the history and development of plant classification with special reference to horticultural plants. A study of modern classification carries with it an expression of opinion as to the evolution of cultivated plants. Credit, 2–3.

106. Advanced Systematic Pomology.—The principles of systematic pomology, including a study of nut and subtropical fruits not usually dealt with in undergraduate courses. Opportunity is also offered for study of leaf and general tree characters of nursery and orchard trees and the relationship of varieties as indicated by these characters as well as those of the fruit. Credit, 5.

200. Thesis.—Each student will be required to carry out an original investigation of an assigned problem. In planning, executing and interpreting the data of this problem he must show marked ability. The results are embodied in a thesis to be passed upon by the Department and the Graduate Staff. Credit, 10–30.

COURSES FOR MINOR CREDIT ONLY.

Pomology 26, Small Fruits.—A study of the growing of small fruits, including raspberries, blackberries, strawberries, currants, blueberries, and grapes, dealing with such questions as varieties, selecting a site for the plantation, soils, fertilizers, pruning, harvesting, marketing, etc.
2 class hours. 1 2-hour laboratory period, credit, 3.

Pomology 53. General Pomology.—A study of the most improved practices in fruit production, including such questions as the selection of orchard sites and soils, laying out and setting the orchard, the structure and growth of fruit plants; the bearing habits, pruning and training of fruits; fertilizers, pollination, winter injury, etc.
2 class hours. 1 2-hour laboratory period, credit, 3.

Pomology 56. Spraying.—(a) Spraying materials, their composition, manufacture, and preparation for use; the desirable and objectionable qualities of each material; formulas used, cost, tests of purity. (b) Spraying machinery, including all the principal types of pumps, nozzles, hose and vehicles; their structure and care. (c) Orchard methods in the application of the various materials used, with the important considerations for spraying each fruit and for combating each orchard pest. This course is designed especially to familiarize the student with the practical details of actual spraying work in the orchard.
1 class hour. 2 2-hour laboratory periods, credit, 3.

Pomology 75. Systematic Pomology (1938–39).—A study of the more important kinds and varieties of fruits grown in he United States, their relationships and nomenclature. Particular emphasis is placed on the identification, classification and value of varieties including a study of the characters of the plant as well as the fruit. Given in alternate years.
1 class hour. 3 2-hour laboratory periods, credit, 4.

Pomology 77. Commercial Pomology (193 –3).—The picking, handling, storing, and marketing of fruits, including a discussion of storage houses, fruit packages, and methods of refrigeration, grading and packing. This course also considers the leading American and foreign centers of fruit production as they affect our own fruit industry through competition here and abroad. Given in alternate years.
2 class hours. 1 2-hour laboratory period, credit, 3.

POMOLOGY 81. ADVANCED POMOLOGY.—A consideration of the scientific principles governing the growth and behavior of fruit-bearing plants. Special attention is given to a critical survey of the more important research work in the field o Pomology.
2 class hours. 1 2-hour laboratory period, credit, 3.
Prerequisite, Pomology 53.

POMOLOGY 82. ADVANCED POMOLOGY.—A continuation o Course 81.
2 class hours. 1 2-hour laboratory period, credit, 3.
Prerequisite, Pomology 81.

POMOLOGY 83. SEMINAR.—Advanced study of problems relating to the business of fruit growing. Each student is assigned a major problem in lines of work in which he is particularly interested. He pursues his studies both by reading and research, and the materials obtained will be worked into theses, which are presented to the seminar for discussion. No lectures are given, but seminar meetings are held for one period each week.
1 class hour. Credit, 1 each semester.
The DEPARTMENT.

Poultry Science.

COURSES FOR MAJOR OR MINOR CREDIT.

101. SCIENCE OF POULTRY HUSBANDRY.—A review of the entire field of poultry literature, including books, bulletins, journals, and other technical publications to furnish a comprehensive background of the present status of knowledge in poultry science. Written reports will be required. Credit, 3–5.

102. POULTRY RESEARCH PROBLEMS.—A critical review of research, experimentation, and demonstration that has been carried out by workers at the various stations in this and other countries. A study of poultry problems in foreign countries together with the outstanding needs in the United States with a view of discovering the needs for fundamental research. Credit, 3–5.

103. ADVANCED GENETICS.—A lecture course offered during both semesters dealing with the experimental study of genetics in relation to plant and animal breeding. Credit, 3–5.

104. INTERPRETATION OF DATA.—A complete analysis of available experimental data on various phases of poultry breeding is undertaken by the student. The student is required to make his own interpretations and to report the results of his analysis. Credit, 3–5.

105. RESEARCH IN BREEDING.—Students may carry on definite experiments in poultry breeding. All research work will be confined to the field of pure and applied genetics. Problems concerned with both physical and physiological characters may be studied. Credit, 10.

106. FEEDING AND NUTRITION.—A study of the relation of various feeds to the morphology and physiology of the fowl. Special attention is given to the effects of various nutrients on growth, sexual maturity, egg production, character of plumage, and condition of flesh. Complete rations as well as methods of feeding are fully considered. Credit, 5.

107. BROODING.—Studies will be made upon the relation between viability and rate of growth and the following topics: type of brooder, number of chicks in brood, ventilation, humidity, sanitation, exercise, and weather conditions; also a comparison of natural methods with artificial methods of rearing chicks.
Credit, 3–5.

108. INCUBATION AND EMBRYOLOGY.—A number of problems of a practical, scientific, and mechanical nature relating to incubation are considered. The work in embryology is of an advanced nature, dealing with its relation to morphogenesis and heredity, and presupposes an elementary knowledge of the embryology of the chick. Credit, 3–5.

109. THESIS.—Research work may be carried out in the following lines: breeding, nutrition, brooding and incubation, and embryology. Originality and thoroughness are particulary emphasized. Credit, 10–30.

110. Genetics and Evolution.—A series of lectures dealing with the genetics of evolution. This course is designed to follow Course 103, and to stress the relation of evolution to genetics. Credit, 3–5.

COURSES OFFERED FOR MINOR CREDIT ONLY.

80. Poultry Problems.—Open to seniors and graduate students. The course consists of problems chosen by the students under the guidance of the department. Credit, 3.

Veterinary Science.

COURSES FOR MINOR CREDIT ONLY.

75. Comparative Veterinary Anatomy.—The structures of the horse, cow, sheep, and pig are studied.
3 lectures a week. Credit, 3.

76. General Veterinary Pathology.—The principles of pathology and their application as related to diseases of domesticated animals are considered.
3 lectures a week. Credit, 3.

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MASSACHUSETTS STATE COLLEGE

Catalogue of the College
1936-37

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FOREWORD.

This bulletin presents the catalogue of the College for the sessions of 1936–37 and announcements concerning courses, admission, etc., for the sessions of 1937–38.

The College reserves, for itself and its departments, the right to withdraw or change the announcements made in its catalogue.

LEGISLATION PERTAINING TO THE COLLEGE.

Without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and mechanic arts in such manner as the legislatures of the states may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life. — *Act of Congress, July 2, 1862.*

The College Charter. — "The leading object of the college shall be to teach subjects relating to agriculture and the mechanic arts, so as to promote liberal and practical education. Its curriculum may include other scientific and classical studies and shall include military tactics." — *From Chapter 75 of the General Laws of Massachusetts.*

The College Catalogue for the sessions of 1936–37 is part of the Seventy-fourth Annual Report of the Massachusetts State College and as such is part II of Public Document 31. (Sec. 8, Chapter 75, of the General Laws of Massachusetts.)

The announcements concerning admission, courses and general information apply to the sessions of 1937–38.

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THE TRUSTEES.

Organization of 1936.

MEMBERS OF THE BOARD.

	TERM EXPIRES
MRS. LOTTIE A. LEACH of Walpole	1937
JAMES F. BACON of Boston	1937
MRS. LENA EDGE WILSON of Pittsfield	1938
HAROLD L. FROST of Arlington	1938
DAVID H. BUTTRICK of Arlington	1939
DAVID J. MALCOLM of Charlemont	1939
JOHN F. GANNON of Pittsfield	1940
DAVIS R. DEWEY of Cambridge	1940
JOSEPH W. BARTLETT of Boston	1941
PHILIP F. WHITMORE of Sunderland	1941
JOHN CHANDLER of Sterling Junction	1942
FREDERICK D. GRIGGS of Springfield	1942
NATHANIEL I. BOWDITCH of Framingham	1943
WILLIAM C. MONAHAN of Framingham	1943

MEMBERS EX OFFICIO.

His Excellency JAMES M. CURLEY, *Governor of the Commonwealth.*
HUGH P. BAKER, *President of the College.*
JAMES G. REARDON, *Commissioner of Education.*
HOWARD HAINES MURPHY, *Commissioner of Agriculture.*

OFFICERS OF THE BOARD OF TRUSTEES.

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GEORGE E. EMERY, B.S., . . . Memorial Hall—29 East Pleasant St.
Field Secretary.
FRANCIS C. PRAY, M.S., ... South College—25 Fearing St.
Assistant College Editor.

CALENDAR.

1937.

Jan. 4, Monday, 8.00 A.M.	Classes begin following Christmas recess
Jan. 25–Feb. 3, Monday to Wednesday	Final Examinations
Feb. 3, Wednesday, 5.00 P.M.	First Semester ends
Feb. 8, Monday, 8.00 A.M.	Second Semester begins
Feb. 22, Monday	Holiday, Washington's Birthday
Mar. 27–Apr. 5, Saturday, 12 M.–Monday, 8.00 A.M.	Spring Recess
April 19, Monday	Holiday, Patriot's Day
May 31, Monday	Holiday, Observance of Memorial Day
June 2–11, Wednesday–Friday	Final Examinations
June 4–7, Friday–Monday	Stockbridge School Commencement
June 11, Friday	Second Semester closes
June 11–14, Friday–Monday	Commencement
June 17–19, Thursday–Saturday	Entrance Examinations
July 6–August 14	Summer School
Sept. 15–17, Wednesday–Friday	Entrance Examinations
Sept. 20, Monday	First Semester begins for Freshmen
Sept. 22, Wednesday, 2.00 P.M.	Opening Convocation for all Students.
Sept. 23, Thursday, 8.00 A.M.	All class schedules start
Oct. 4, Monday	First Semester begins for Stockbridge School Freshmen
Oct. 5, Tuesday	First Semester begins for Stockbridge School Seniors
Oct. 12, Tuesday	Holiday, Columbus Day
Nov. 11, Thursday	Holiday, Armistice Day
Nov. 24–Nov. 29, Wednesday, 12 M.–Monday, 8.00 A.M.	Thanksgiving Recess
Dec. 18–Jan. 3, Saturday, 12 M.–Monday, 8.00 A.M.	Christmas Recess

1938.

Jan. 24–Feb. 2, Monday–Wednesday	Final Examinations
Feb. 2, Wednesday, 5.00 P.M.	First Semester ends
Feb. 7, Monday, 8.00 A.M.	Second Semester begins
Feb. 22, Tuesday	Holiday, Washington's Birthday
Mar. 26–Apr. 4, Saturday, 12 M.–Monday, 8.00 A.M.	Spring Recess
April 19, Tuesday	Holiday, Patriots' Day
May 30, Monday	Holiday, Memorial Day
June 1–10, Wednesday–Friday	Final Examinations
June 3–6, Friday–Monday	Stockbridge School Commencement
June 10, Friday	Second Semester closes
June 10–13, Friday–Monday	Commencement
June 16–18, Thursday–Saturday	Entrance Examinations

INFORMATION CONCERNING THE COLLEGE

HISTORICAL SKETCH.

One of the outstanding achievements of the middle of the nineteenth century was the remarkable development in the field of science. This, in turn, brought about great changes in industry, transportation and agriculture and stimulated the desire for new information and further training. People were enthusiastic about the possibilities of the future. It is not surprising, therefore, that scientific courses gradually found their way into the academies and colleges. This was not without opposition from the friends of the old classical training, however. In many instances institutions founded along literary and philosophical lines did not favor the introduction of courses based on the needs of students desiring to perfect themselves in the technical principles and practices of the arts and industry. The demand for such courses increased nevertheless. It was evident that the old order of education was changing but at the time the new was not apparent. It was under such conditions that the Massachusetts State College had its birth.

The Morrill Act.

This demand for technical education finally crystallized into a bill before Congress known as the Morrill Act of 1862 endowing colleges for this purpose in every state of the Union. The original bill was framed by Senator Justin L. Morrill of Vermont and its final enactment obtained under his leadership. This bill provided in each state for "the endowment for and maintenance of at least one college where the leading object shall be, without excluding other scientific and classical studies and including military tactics, to teach such branches of learning as are related to agriculture and the mechanics arts in such manner as the legislatures of the states may respectively prescribe in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." Massachusetts accepted the provisions of the Morrill Act in 1863 by founding a new college at Amherst to be known as "Massachusetts Agricultural College" and Chapter 75 of the General Laws of the Commonwealth states that "the leading object of the College shall be to teach subjects relating to agriculture and the mechanics arts so as to promote liberal and practical education. Its curriculum may include other scientific and classical studies and shall include military tactics."

Founding and Early Growth of the College.

The Trustees of the Massachusetts Agricultural College were incorporated in 1863 and officers were appointed in that year. It was not until October 2, 1867, however, that the institution at Amherst was formally opened to students. At that time there were four teachers on the faculty and four wooden buildings on the campus. The number of students steadily increased during the first term and by December, 1867, forty-seven had been admitted. From this modest beginning the College has grown steadily and its influence has been felt in many parts of the world. On April 15, 1931, the name of the institution was changed by legislative enactment to Massachusetts State College.

Scope of the Institution.

In a sense, experimental work is as old as the institution, for during its earliest years some very important investigations were carried on by the instructors. Research work was established as a separate unit, however, in 1882, when the State provided for the establishment of an agricultural experiment station here. In 1887 another experimental unit, the Hatch Experiment Station, was provided by Federal appropriation. These two stations were combined in 1895 and have since been known as the Massachusetts Agricultural Experiment Station.

State law also provides for the maintenance at this College of a Control Service the purpose of which is to regulate the sale of certain agricultural prod-

ucts for the protection of purchasers and also to eliminate certain diseases of poultry.

The Extension Service of the College was established in 1912 and was first supported by grants of Federal Funds in 1914. This division of the College undertakes the large responsibility of teaching adults and boys and girls throughout the State, who cannot come to the College for instruction, better methods in agriculture and home-making.

Resident Instruction.

Opportunities for resident instruction have expanded greatly since the founding of the College in 1863. In addition to the four-year course leading to the Bachelor of Science degree, there are now offered such short courses as the Winter School, Summer School, and the two-year course in practical agriculture known as the Stockbridge School. The Graduate School offers opportunity for study for advanced degrees. The curriculum of the four-year course includes comprehensive courses in Agriculture, Home Economics, Horticulture, Humanities, Landscape Architecture, Physical and Biological Sciences, Physical Education and Social Sciences. The aim is to give to each student as high a degree of proficiency in some particular branch of learning as is possible without sacrificing the breadth of knowledge and training which should characterize the well-rounded college course.

THE COLLEGE CAMPUS.

Hand in hand with this steady growth of the College, there has come a marked expansion in physical equipment. The original farm of 1867, with its run-down fields and degenerated apple orchards cut up here and there by old Virginia rail fences and hedge rows has metamorphosed into one of the most attractive college campuses in New England. A brief statement of land, buildings and equipment will show to what extent the original four wooden buildings have been out-grown.

Location and Lands.

The State College is located in Amherst, a town of about six thousand people, overlooking one of the most picturesque sections of the Connecticut Valley. From the standpoint of teaching material in the field of science and agriculture, the location is ideal. Amherst is ninety-seven miles from Boston and may be reached by the Central Vermont Railroad, or by bus connections from Northampton, Holyoke, Greenfield, and Springfield. The campus consists of a tract of approximately seven hundred acres, lying about a mile north of the village center. In addition the college owns another area of seven hundred and fifty-five acres located about six miles north of the campus on Mount Toby. This is used for a demonstration forest.

The College also operates a horticultural field station at Waltham and a cranberry field station at Wareham.

Buildings and Equipment.

The campus is laid out in the form of an oval attractively set off by the college pond in the center. Around this oval are grouped the main buildings of the college. In the following list the buildings are presented in order about this oval.

South College. — Here are located the administrative offices, including the offices of the President, Dean, Treasurer, Secretary, the Extension Service, Short Courses, Placement Service and Women's Adviser. The Department of Economics also has offices here. Erected 1885.

North College. — Primarily a freshman dormitory accommodating about seventy-five students. On the first floor is located the College Store and Barber Shop. Erected in 1868.

Flint Laboratory. — The work in Dairy Industry is carried on here. The building is well equipped with modern machinery for the production of market milk, ice-cream, butter and cheese. This building was erected in 1911 and was named in honor of Charles L. Flint, fourth president of the college. On the second floor is located the foods laboratory of the Department of Home Economics.

Stockbridge Hall. — Here are located the departments of Agricultural Economics and Farm Management, Agronomy, Animal Husbandry, Agricultural Engi-

neering, Poultry Husbandry, Education and English. In addition to the lecture rooms and offices are laboratories for soil fertility, field crops, poultry, and a drafting room for engineering. The clothing and house furnishing laboratories for the Home Economics Department are also located here. In the rear of the building are the greenhouse and head house used by the Department of Agronomy for work with crops and soils. A special reference library for the Division of Agriculture is on the second floor. Bowker Auditorium, the largest auditorium on the campus, is also in this building. It has a seating capacity of nine hundred and is named in honor of William H. Bowker, a member of the first graduating class, later a Trustee of the College, and one of the pioneers in the fertilizer industry. Stockbridge Hall was erected in 1914 and named in honor of Levi Stockbridge, a former president and professor of Agriculture in the college.

Horticultural Manufactures Laboratory. — Erected in 1929. Both research and instructional work in food preservation are carried on here. The laboratories are well equipped with modern apparatus used in this rapidly developing field.

Grinnell Arena. — Erected in 1910 primarily for livestock judging. An abattoir was constructed in 1930 as an addition to the original building. Named in honor of James S. Grinnell, for twenty-two years a trustee of the College.

Farley 4-H Building. — This building was constructed in 1933 as an assembly hall and general headquarters for 4-H Club activities upon the campus. The cost of the building was met by gifts from club members throughout the state.

Agricultural Engineering Laboratory. — Included in this laboratory for students of Agricultural Engineering are a carpenter shop, general repair shop, and a laboratory for farm machinery and motors. The building was erected in 1916.

Draper Hall — This is the college dining hall. Service is by cafeteria style and there are seating accommodations for about four hundred and fifty at one time. There is a small banquet room on the second floor and several dormitory rooms. Erected 1903 and an addition in 1912, and named in honor of James Draper, for twenty years a trustee of the college.

Goessmann Laboratory. — This is a modern chemical laboratory. The building is approximately two hundred feet by eighty feet and contains eight large laboratory rooms, an auditorium, a chemical library, and lecture rooms. The east wing of the third floor is occupied by the research professors in Chemistry of the Experiment Station. In addition to the work in Chemistry the class work in German is held in this building. Goessmann Laboratory was erected in 1924 and named in honor of Charles A. Goessmann, the first professor of Chemistry at the college.

West Experiment Station. — The state control work is centralized here. Fertilizers, seeds, feeds and dairy glassware are analyzed or inspected in accordance with the state law, to determine whether or not they meet their guarantee. Erected in 1886.

East Experiment Station. — The office of the Director of the Experiment Station and other administrative offices of the Experiment Station are located in this building.

Abigail Adams House. — This is a modern girls' dormitory accommodating about one hundred students. It was erected in 1919 and named for Abigail Adams, a staunch believer in farm life, the wife of John Adams, second President of the United States. In the rear of the building is an athletic field used in connection with the physical training of the women students.

The Homestead. — Girls majoring in Home Economics receive their Home Management practice in the Homestead. It is a remodelled colonial farmhouse equipped with all the modern conveniences of the home.

Thatcher Hall. — This is a commodious dormitory for freshman men students, constructed in 1935. It contains library, recreation rooms and facilities for 150 students. It is named in honor of the late Roscoe W. Thatcher, tenth president of the College.

Marshall Laboratory. — This building, erected in 1915, is especially designed to carry on work in Physiology and in Bacteriology as it relates to soil, industry, dairying, foods and public health. There are four class laboratories, several private laboratory rooms and offices and a lecture room. In addition there are incubator

rooms, sterilizing rooms, hood rooms, washing rooms, inoculating rooms, weighing rooms, an animal room, a photographic and dark room, and a sub-basement refrigerator room. There is also a well-equipped library containing books and current periodicals useful in the conduct of bacteriological and physiological study. The building is named in honor of the late Dr. Charles E. Marshall, head of the Department of Microbiology from 1912 to 1927.

Infirmary. — The infirmary is composed of two small cottages and a large ward building all located on the hillside north-east of Marshall Laboratory. The facilities are specially designed for the care of sick and injured students. A trained nurse is on duty at all times.

Physics Building. — This is a wooden building erected in 1867. It contains a well-equipped laboratory for work in college Physics and also one lecture room.

Wilder Hall. — Here are located the departments for Landscape Architecture and Horticulture. The building is chiefly devoted to classrooms, drafting rooms, and offices. It was erected in 1905 and named in honor of Marshall P. Wilder, a pioneer in the movement for agricultural education in Massachusetts and one of the first trustees of the college.

Fisher Laboratory. — This is a well planned and equipped fruit packing and storage house. It includes six refrigerator rooms, four storage rooms not refrigerated, one large laboratory room, one class room besides ample storage space for fruit packages and equipment. The equipment for the building itself includes four types of apple sizers, packing tables and box and barrel presses of various types, besides all kinds of packages with smaller equipment necessary for thoroughly modern work in grading and packing fruit. This building is used by the Pomology Department and was named in honor of Jabez Fisher, one of the foremost, early horticulturists of the State. Erected 1910.

French Hall. — French Hall houses the departments of Pomology, Floriculture, Forestry and Vegetable Gardening. The classroom work in Economics, Sociology, French and Spanish is also given here. Just to the rear of the building is the new Durfee range of greenhouses, devoted to the growing of carnations, roses, chrysanthemums, sweet peas, etc. One house is maintained as a conservatory and contains a collection of plants used primarily for decorative purposes. Two houses are devoted to greenhouse vegetables. The old Durfee range located just to the north of French Hall is used chiefly for the growing and maintenance of a collection of conservatory plants. There are also many of economic value such as the bamboo, camphor tree, guava, palm, etc. French Hall was erected in two sections; the first in 1908, the second in 1913. It was named in honor of Henry F. French, the first president of the college.

Clark Hall. — Here are located the offices, lecture rooms and laboratories of the Department of Botany. In addition to the main building, there is a greenhouse used for research and laboratory purposes. The herbarium contains about twenty thousand sheets of seed plants and ferns, twelve hundred sheets of liverworts and mosses and a collection of twenty-five thousand specimens of fungi. Erected in 1906 and named in honor of William S. Clark, president of the college 1867 to 1879.

Fernald Hall. — This building, erected in 1909, was named in honor of Professor Charles H. Fernald, who served the college for twenty-four years, built up a strong department in Zoölogy, created the department of Entomology, and acted as Director of the Graduate School. Fernald Hall houses the Department of Entomology, Zoölogy and Geology. In addition to laboratories, lecture rooms, and offices, there is a Geological Museum, a Zoölogical Museum and a collection of over 160,000 insects. Material in these collections is available for study and for exhibition purposes.

Mathematics Building. — This building contains classrooms for instruction in mathematics and surveying. There is also a well equipped drafting room, and a small one devoted to blue-printing.

Paige Laboratory. — The work in Veterinary Science is located in this building. In addition to the class, lecture, and laboratory rooms, there are the laboratories for Research work on animal diseases and Control Service in Poultry Disease Elimination. The museum contains a growing number of anatomical

and pathological specimens, most of which are used for teaching purposes. In the rear of the building are the stables for housing both laboratory and larger animals under isolation conditions for dissection, post mortem examinations and for incineration purposes. Paige Laboratory was erected in 1898 and named for James B. Paige, professor of Veterinary Science from 1891 to 1922.

Physical Education Building. — This building, dedicated at Commencement in 1931, offers splendid modern facilities for physical education, including a swimming pool 75 by 30 feet, an exercise hall 150 by 180 feet, locker rooms, baths, and other modern facilities. Of the total cost of $287,000, alumni and friends of the college contributed $115,000; the remainder was appropriated by the State Legislature.

Alumni Field. — This tract of land was transformed into an Athletic Field, containing a baseball diamond, football field, and cinder track, by the alumni and friends of the college. Completed 1915, extended in 1935.

Drill Hall. — This building houses the Department of Military Science and the Department of Physical Education for Women. It contains armory, offices and classrooms for the former and locker and dressing rooms and large exercise hall for the latter.

Women's Athletic Field. — This field was constructed as a W.P.A. project and completed in 1936. It affords excellent outdoor facilities for athletics for women students and is conveniently located just west of the indoor headquarters.

Memorial Hall. — The social center of student life is Memorial Hall. It was erected by the alumni, students, faculty and friends of the college in memory of those men of this college who died in the World War. In the basement are bowling alleys, pool tables, and game rooms. On the main floor are eight offices for the leaders of various student activities, a large reading room and lounge and a beautiful Memorial Room in which is a tablet bearing the names of the sons of the college who gave their lives in the Great War. On the second floor is an auditorium seating 350 persons. This room is also used for college dances. Memorial Hall was erected in 1921.

Old Chapel. — This building is being reconstructed as a P.W.A. project to provide classrooms, offices and a small auditorium for the use of the Division of Social Sciences. The building formerly served as the College library and at one time as both library and chapel. It is a fine granite structure erected in 1885.

Goodell Library. — This fine new building completed in 1935 houses the College Library. This library contains one of the best collections in agriculture and related sciences in the country, with especial strength in entomology, botany, chemistry, horticulture, landscape architecture, soil science, and animal husbandry, but with considerable collections, also, in literature, history, economics, and sociology. There are over 100,000 bound books, and over 50,000 classified pamphlets giving most recent information. The periodical file contains over 550 current magazines, both scientific and popular, and a careful selection of newspapers, together with many periodical publications of learned societies. The Library is unusually rich in files of journals and proceedings of Experiment Stations and learned societies. The building is open on week days from 8 A.M. to 10 P.M., and from 1.30 to 4.30 and 7 to 9 P.M. on Sundays during semesters and with somewhat shorter hours during vacations and Summer School.

The building is named in memory of Henry Hill Goodell, President of the College from 1886 to 1904 and College Librarian from 1886 to 1898.

Power Plant. — Heat and light are supplied to all the buildings on the campus from a central power plant. This was erected in 1902 and has been subsequently remodeled.

Farm Buildings, Land and Equipment.

College Farm and Barns. — The college farm consists of 240 acres located just west of South College. Most of it is suitable for cultivation and is operated in regular rotation. Much of the farm as it now stands has been made productive by tile draining and clearing the land of brush and stumps. The principal crops raised are those which can be utilized by the livestock, together with some cash crops such as cabbage, carrots, potatoes, and hay. For instructional work the farm is available for study in field crops, planning of crop rotation, practical

field operation of farm machinery and tractors and farm management. The livestock of the farm consists of about 200 head of registered cattle which are excellent representatives of the Ayrshire, Guernsey, Holstein, Jersey, Milking Shorthorns, and Hereford breeds, a considerable number of registered Chester White swine, a flock of about 100 Shropshire and Southdown sheep and 30 Percheron horses. These animals are used chiefly for demonstrational and instructional work in feeding and herd management and in the teaching of correct types by much practice in judging. The farm buildings are model structures for their various purposes. They were erected in 1909 and subsequently. The dairy barns contain efficient and modern equipment for their respective purposes. The sheep barns and piggery are located several hundred yards from the dairy barns.

Cavalry Stable. — This stable has a capacity for the sixty horses which are used by the college cavalry troop. Erected in 1925.

Poultry Plant. — The college poultry plant consists of about eight acres of land and the necessary buildings that go to make up a modern college poultry laboratory. This land and an equal area on the college farm permit a three-year rotation for growing stock. The plant will accommodate 2,000 laying birds and has growing facilities for about 7,000 chicks. The incubator capacity of the plant is approximately 12,000 eggs at one time. Located about one-half mile east of the college, on East Pleasant Street, is the experimental poultry farm which accommodates about 1,200 adult birds and has hatching facilities for about 3,000 chicks. Here experiments on breeding poultry for egg production and disease control are carried on under strict quarantine.

Nutrition Laboratory. — This building was formerly the Hatch Barn used for experimental work in the feeding of livestock, and in it many valuable discoveries were made. Progress, however, had reached the stage where, because of the influence of a more artificial environment and a less natural food supply, it became necessary to intensify the former feeding programs. To meet this requirement this building has been remodeled for the accommodation of the small animals necessary for investigational work in this field. When fully completed this structure, in its modernized form, should provide as good facilities for investigation in the field of nutrition, both human and animal, as are available in any Land Grant College in the country.

Experiment Station Barns. — These buildings contain the equipment and animals used in connection with the work of the Experiment Station.

Orchards and Vineyards. — The college orchard contains about 20 varieties of peaches, 25 of plums, 20 of pears, and 100 of apples. Common varieties of grapes are grown in the vineyards and with the various approved trellis systems. These orchards are used for teaching material in Pomology.

Vegetable Gardens. — Here are grown the class material used by the vegetable gardening department.

Mt. Toby Demonstration Forest. — This is an area of approximately 750 acres located on Mt. Toby. It contains the various types of forest growth found throughout the State. It serves as a field laboratory in forestry and Wild Life Management. Students have the privilege of working out problems in silviculture, forest mensuration and management. Improvement cuttings, cutting for utilization and forest planning are conducted here also.

COURSES OF INSTRUCTION.

Courses Leading to a Degree.

Four-Year Course. — The degree of Bachelor of Science is granted to those students who satisfactorily complete the regular four-year course. Special arrangement is made for some graduates of county agricultural schools to receive the degree of Bachelor of Vocational Agriculture for four years of college work.

Five-Year Course in Landscape Architecture. — A five-year course is offered in Landscape Architecture leading to the degree of Bachelor of Landscape Architecture.

Graduate School. — The degrees of Master of Science, Master of Landscape Architecture and Doctor of Philosophy may be granted upon the completion of satisfactory study, research and a thesis.

Summer School. — Both graduate and undergraduate courses are offered in the six weeks' summer school and credits earned may apply toward the Bachelor's degree or advanced degrees.

Non-Degree Courses.

Several short courses in agriculture are offered which do not lead to a degree. These are for the benefit of those who are not prepared to take the degree course or who desire only a practical training in modern agriculture methods.

Stockbridge School of Agriculture. — This is a two-year course in practical agriculture offering a high type of training to those who wish to enter some special agricultural enterprise. A separate descriptive catalogue will be sent on request.

Winter School. — A ten weeks' practical course in agricultural and horticultural subjects begins about January first each year. The courses are so arranged that a student may choose such subjects as will enable him to specialize in the line of work in which he is most interested.

HEALTH SERVICE.

The College endeavors to safeguard the health of all students while on the campus and for this purpose maintains a Department of Student Health, staffed by two physicians, a resident registered nurse, and a group of three Infirmary buildings.

(1) Physical examination by the Health Service is required of all undergraduate students annually, or more often if indicated. This examination is given to freshmen during matriculation week. Evidence of a SUCCESSFUL smallpox vaccination is required.

(2) The Student Health physicians have offices in the Physical Education Building and in the Out-Patient Infirmary Building, where they may be consulted during college hours.

(3) The Infirmary consists of 3 buildings, one for bed patients, one for contagious cases, and one for out-patient cases, where the out-patient clinic is conducted daily by one of the Student Health physicians.

(4) The students are urged to consult the resident physicians at the first sign of physical disorder, or for even minor accidents. Many severe illnesses and much lost time can be avoided by early or preventive treatment.

(5) The Infirmary charges will be at the rate of $2 per day, and will be charged when one or more meals are obtained at the Infirmary, or when the student remains at the Infirmary for one or more nights. A nominal charge may be made to out-patients for miscellaneous treatment of a minor character.

(6) In addition to the fee charged as specified in paragraph 5, the following additional expenses will be charged to the patient.

(a) *Nurses.* — In case a special nurse is required for the proper care of an individual the services and board of this nurse will be paid by the patient. Such a nurse will be under the general supervision of the resident nurse.

(b) *Professional Service.* — If a student requires continuous medical attention by a physician, he may be required to select a town physician and become responsible for fees charged by that physician.

(c) *Supplies.* — Special medical supplies prescribed by a physician will be charged to the patient.

(d) *Laundry.* — Expense for personal laundry incurred by students while in the Infirmary will be charged to the individual student.

STUDENT EXPENSES.

Student college expenses vary from approximately $450 per year to $600 for the normal economical student. First year expenses are usually greater than those of the other three years and there is less opportunity in this year to earn. It is, therefore, recommended to the entering student that he have available at least $450 with which to meet the expenses of the first year. Women students are recommended to plan on a minimum expense of $550.

The following summary of a year's expenses includes only those items which are strictly college costs and does not include amounts for clothing, travel, etc.,

which vary with the individual. Tuition for residents of Massachusetts is $100 and for others $220.

	Low	Normal
Tuition (citizens of Massachusetts)	$100.00	$100.00
Room in college dormitory or in private house	70.00	140.00
Board, $6.50 per week (College Dining Hall)	221.00	221.00
Laundry, 50 to 85 cents a week	18.00	30.00
Books, stationery and miscellaneous items	60.00	90.00
Student Taxes	25.00	25.00
	$494.00	$606.00

Initial Payment for Freshmen.

The initial payment required of freshmen at the time of fall registration is approximately $190 and is made up of the following items:

Tuition (citizens of Massachusetts)	$50.00
Room rent (dormitory)	50.00
Board (College Dining Hall to Dec. 1) (Approx.)	60.00
Military Uniform	15.00
*Student Tax	13.00
	$188.00

Graduation Requirements.

No student will be graduated unless all bills due the college are paid on or before the Wednesday preceding the graduation exercise. If paid after that date and otherwise eligible he may graduate the following year.

Diplomas and letters of honorable dismissal will be withheld from all students who have not paid bills due the college or legitimate bills for room rent due fraternities or private individuals.

Advance Payment.

Prospective new students will be expected to make an advance payment of $15 to the Treasurer of the College as soon as they are notified by the Dean that they are accepted for admission. This will be considered as first payment on registration fees which will be due at time of matriculation in September and will be returned to the student if he advises the College before August 20 that he will not present himself for admission. If the student fails to notify the College of withdrawal before that date this preliminary payment will be forfeited and will be considered payment for the expenses involved in preliminary admission arrangements.

Refunds.

A student who leaves college for any reason before a semester is half completed will have refunded to him one-half the fees paid for that semester, but one who leaves after a semester is half over will be allowed no rebate of fees and a refund of only unused board and room charges.

College Fees.

All students are required to pay the College fees at the Treasurer's Office and file their registration cards in the Dean's Office within one week after the opening of College. Fee for late registration, $1.00.

Tuition. — Residents of Massachusetts are charged a tuition fee of $100 per year, payable in advance in two instalments of $50 each on the first day of each semester. For those who are not residents of Massachusetts, the tuition fee is $220 per year. Students entering from Massachusetts are required to file with the Treasurer a statement signed by town or city clerk, stating that the applicant's father or legal guardian is a legal resident of Massachusetts, unless applicant himself is of legal age, in which case a similar statement must be filed indicating his own legal residence. Where the guardian is certifying to this statement, it will be necessary for him to furnish a copy of his appointment by the court.

* This tax is for the support of student activities and entitles each student to free participation in the various enterprises represented.

Military Uniform. — All students taking military drill are required to make a deposit of $15.00 for the uniform. A rebate of this amount is made when the uniform is returned. Shoes are also furnished at approximately $4.00 per pair.

Board. — All freshmen students and all residents of college dormitories are required to board at the college dining hall. However, upper-class men, residents of dormitories, may board off-campus but only in approved dining halls which are under faculty supervision. Service is on a cafeteria basis and students pay in advance at the rate of approximately $6.50 per week, as follows:

At the opening of college	$60.00
At December 1	46.05
At the beginning of second semester	44.20
Upon return from spring recess	61.35

For absences of one week or more rebates at the rate of $5.50 per week may be granted provided the absence is authorized by the Dean and the rebate approved by the Treasurer. No rebates will be allowed for absences of less than one week.

If a student's home is nearby and for this or any similar reason he is regularly absent from the campus over week ends, upon request from his parent or guardian, approved by the Dean of the College, he may board in the college dining hall for a five-day week (fifteen consecutive meals beginning with Monday breakfast) at the rate of 80 per cent of that paid for a seven-day week.

Excuses from compliance with these regulations concerning board shall be made only by the Treasurer of the College, who may require a recommendation in individual cases from the Student Health Officer, if the excuse is requested for health reasons, or from the Dean if the reason has to do with the student's academic opportunities.

Rooms.

1. It is the policy of the Board of Trustees that freshman men students and all women students in the four-year course shall be housed in campus dormitories in so far as accommodations are available.
2. Since sufficient dormitory accommodations for all of these students are not available at the present time, the following procedure will be followed to the end that those which we do have will be used to capacity and that assignments will be made with justice to all concerned.

Women Students.

a. All freshman girls will be assigned rooms in campus dormitories. The Adviser of Women may excuse any at her discretion for the reasons that they wish to live at home or that they have opportunity to earn board and room in a private residence.

b. All sophomore girls will live in campus dormitories to the extent that accommodations are available unless excused by the Adviser of Women.

c. Upper-class girls may live in campus dormitories if accommodations are available and their wishes should take precedence over the sophomore requirement. Their selection of rooms will be by lot under the supervision of the Adviser of Women.

d. At the close of each college year all sophomore girls will draw lots for dormitory rooms for the next year. Assignments to rooms will be made in accordance with the sequence fixed by this draw. As vacancies occur during the year, the Adviser of Women will assign these vacated rooms to sophomore girls in accordance with this sequence and any student thus assigned to a dormitory room must take up residence there within two weeks after receipt of notice.

e. It is expected that not more than one sophomore girl from any one sorority will be assigned dormitory room in any single year under the provisions of "d."

f. Dormitory accommodations are available for about one hundred and twenty women students in the Abigail Adams House and Draper Hall. These rooms are furnished except for necessary bedding or linen and are cared for by the students occupying them. A list of approved off-campus rooms is kept by the Adviser of Women.

Men Students.

a. Assignment of rooms for men students is in charge of the Assistant Dean.

b. Upper-class men usually obtain rooms in fraternity houses or in private homes near the campus. Rent usually ranges from $2.50 to $4.00 per week, depending upon location and nature of the room. Such rooms are usually furnished.

Students desiring aid in obtaining off-campus rooms should write to the Assistant to the Dean. The College does not secure these rooms for students but does keep a desirable list for student aid.

c. All freshman men students, unless granted permission to commute, will be required to room in college dormitories.

d. Dormitory accommodations are available at North College and Thatcher Hall. The rooms are furnished except for necessary bedding and linen. They are cared for by the students who occupy them.

3. The general supervision of housing of students is in charge of the Faculty Committee on Housing.

STUDENT EMPLOYMENT.

The College affords opportunity for part-time employment for a limited number of needy students. The number of applicants usually far exceeds the number of positions open so that no guarantee can be made that a student will find employment through the College. The College Placement Service renders every possible assistance to deserving students in search of employment. Besides such opportunities on the campus as waiters and kitchen helpers at the dining hall, janitors for buildings, assistants on the farm and in college laboratories, there are some opportunities in private homes and businesses in the town.

Prospective students should be cautioned not to depend too much upon their earning capacity in the first year. This year is the most difficult to finance for two reasons. This is the student's first experience with college work and the usual result is that more time is required for study and less is therefore available for work. In this year also, since it is the first, the student is less familiar with his surroundings and not so able to locate work. Upper class men usually have most of the available jobs before the freshmen get acclimated. Students who are planning to enter college for the first time are therefore advised that they should have at least $450 available with which to meet the expenses of the first year. Some students stay out of school for a year after graduating from high school in order to work and save this amount.

N.Y.A. STUDENT EMPLOYMENT PROJECTS.

The College has been granted student employment funds by the Federal Government during the past two college years. The policy of the Federal Administration cannot be predicted in advance but it is safe to assume that as long as student relief projects are in effect our college will be a participant. The type of work to which students are assigned under N.Y.A. projects consists of the following: Clerical and office, library and museum, laboratory and research assistance, reading and grading papers and all other or miscellaneous types.

In addition to the college projects, community projects are organized consisting of the following types of work: Education, recreation, health and welfare and other miscellaneous types.

The rate of pay is 30 cents per hour. The positions are based on the average earning capacity of $15.00 per month. During the college year of 1936–37 twelve per cent of our students were assigned to positions under this project.

Special consideration is given to new students under these projects, hence while the general college policy does not encourage the new student to seek employment, yet one of the conditions under which the college participates in N.Y.A. projects is that new students receive their pro rata share.

SCHOLARSHIPS.

Scholarships are awarded only to needy students of high character, whose habits of life are economical and who have maintained an average of at least 70% in their college course during the preceding year. Scholarships from the

Crane and Ward Funds may be granted to applicants for admission to the College provided they are candidates for a degree, are in need of financial assistance and are able to meet the entrance requirements in full. Complete information relative to the student's need for financial aid must be presented before any application can be acted upon. Scholarships are paid in installments at the beginning of each semester in the form of a credit on the student's bill. A scholarship may be discontinued at the close of any semester if the scholastic record of the recipient is unsatisfactory.

Blanks for applying for a scholarship may be obtained from the Dean of the College. Applicants from the three upper classes must file at the Dean's Office before the close of the college year an account of their income and expenses for that college year together with a statement of their resources for the coming year.

Last year there were 87 scholarships, ranging on the average from $30 to $60, and totaling $3,380, awarded from the income of the following funds:

Porter L. Newton Scholarship Fund.
Henry Gassett Scholarship Fund.
Whiting Street Scholarship Fund.
Charles A. Gleason Scholarship Fund.
Frederick G. Crane Scholarship Fund.
(Available only to students from Berkshire County.)
Helen A. Whittier Memorial Scholarship Fund.
(Available only to women students.)
Hood Dairy Scholarship Fund.
(Available to students of dairying.)

There are also the following special scholarships:

Cotting Memorial Scholarship, — all college expenses of freshman year — for woman student.

Wilbur H. H. Ward Scholarships, —
Twenty-five scholarships of approximately $100 known as the Wilbur H. H. Ward Scholarships. The Wilbur H. H. Ward Fund is administered by a Board of Trustees independent of the College. Applicants for these scholarships should write to Mr. Sumner R. Parker, who may be addressed at the College.

LOANS.

Loans may be granted to needy students requiring some assistance in meeting the expenses of the college course. All such loans must be paid before graduation. The student must present a properly endorsed note at the time a loan is made. With the exception of loans from the Lotta Agricultural Fund, money thus loaned is at a low rate of interest until the student graduates or severs his connections with the College. Applications for a loan should be made at the Treasurer's Office.

These loans are made available through the income from the following funds:

Danforth Keyes Bangs Fund. — This is a gift of $6,000 from Louisa A. Baker of Amherst, the income of which is to be used annually in aiding poor, industrious and deserving students to obtain an education in the Massachusetts State College.

Lotta Agricultural Fund. — A limited number of loans are made to students from the income of this fund. Such loans are made without interest but only to deserving students of high scholastic rank. This fund is administered by a Board of Trustees independent of the College although loans are made only upon the recommendation of the President of the College.

Massachusetts Agricultural Club Fund. — The Massachusetts Agricultural Club has given $500 to be used as a loan fund at the Massachusetts State College to to help deserving students there who intend to go into agricultural work.

4-H Club Loan Fund for Boys. — A loan fund of $1,000.

4-H Club Loan Fund for Girls. — A loan fund of $100.

Vincent Goldthwait Memorial Loan Fund. — A gift of $5,000 from Dr. Joel E. Goldthwait in memory of his son.

SCHOLARSHIP HONORS AND AWARDS.

Dean's Scholarship Groups. — At the beginning of each semester a list is posted of those students who during the previous semester made a general average of 80 per cent or better. Three groups are recognized: those between 90 and 100; those between 85 and 90; and those between 80 and 85. Sophomores, Juniors and Seniors in the first two groups are allowed considerable freedom in the matter of class attendance.

Departmental Honors. — A student who has shown outstanding promise within some department and has maintained a general scholastic average of 80 per cent or better is permitted to apply for the privilege of registering for departmental honors. If his application is accepted by his department and the Honors Committee, he is allowed to pursue a course of independent study within the department of his choice throughout his senior year. This may include intensive reading, investigation or laboratory work in connection with some problem that he chooses for his consideration. The objective is to create on the part of the student initiative, the power of independent investigation and to develop in him the spirit of research. Although the student is responsible for his undertaking he is encouraged to consult with his department in regard to his work should the need arise. At the close of his study the student presents a thesis covering his investigation. In addition he may be required to appear for an oral or written examination. If by the excellence of his work he satisfies all the requirements of his department and the Honors Committee his name will appear on the commencement program as receiving honors in the field of his specialization.

Phi Kappa Phi Elections. — Those members of the senior class whose scholarship average has been 85 or above are eligible for election to the Honorary Scholarship Society of Phi Kappa Phi. Not more than 15 per cent of the class can be elected, however.

Scholastic Prizes.

Phi Kappa Phi Award for Scholarship. — Massachusetts Chapter of the Phi Kappa Phi Honorary Scholarship Society offers an award of $50 for outstanding work in scholarship. This is given to some member of the Senior class at the opening of college in the fall. The award is based on the record of the first three years.

The Grinnell Prizes. — Given by the Hon. William Claflin of Boston, in honor of George B. Grinnell, Esq., of New York, for excellence in theoretical and practical agriculture. The contest is open to those senior students whose records on the registrar's books show an average standing of 80 or above for the technical work taken in the Divisions of Agriculture and Horticulture during the junior and senior years. There are three prizes of $25, $15, and $10.

The Burnham Prizes. — These were made possible through the generosity of Mr. T. O. H. P. Burnham of Boston. Prizes of $15 and $10 are awarded to those students delivering the best and second best declamations in the Burnham contest. The preliminary contests are open under certain restrictions to freshmen and sophomores.

The Flint Prizes. — The Flint Oratorical Contest was established in 1881 by a gift of the late Charles L. Flint, a former president of the college. After his death the prizes were continued by college appropriation. Prizes of $30 and $15 are awarded as first and second prizes to those two students delivering the best orations in this contest.

The Hills Botanical Prize. — This is given through the generosity of Henry F. Hills of Amherst, for the first and second best herbaria. Competition is open to members of the senior, junior and sophomore classes. First prize $20, second prize $15.

The Betty Steinbugler Prize in English. — This prize was endowed by John L. Steinbugler, New York City, in honor of his daughter Elizabeth Steinbugler Robertson, a graduate of this College in the Class of 1929. It is awarded annually to a woman in the junior or senior class who has written the best long paper on a subject of literary investigation in a course in English during the year.

ATHLETIC AND ACADEMICS PRIZES.

The Allan Leon Pond Memorial Medal. — This medal is awarded for general excellence in football in memory of Allan Leon Pond of the Class of 1920, who died February 26, 1920. He was a congenial companion, a devoted lover of Alma Mater, a battle-scarred, though youthful, veteran of the Great War, a fine all-round athlete and a true amateur. He would rather win than lose, but he would rather play fair than win. He has been characterized as a typical student of this College.

The Southern Alumni Baseball Cup. — This cup is awarded to that member of the baseball team who contributes most to the success and reputation of the team, both in respect to skill and spirit.

The Thomas E. Minkstein Memorial Award. — This award is made by the Class of 1931 in memory of their classmate who died July 16, 1930, while he was captain-elect of football. The award is given to one of the outstanding men in the Junior Class who has as nearly as possible attained those standards of athletics, scholarship and leadership set by him whose memory this award honors.

The George Henry Richards Memorial Cup. — This cup is awarded annually to the member of the basketball team who shows the greatest improvement in leadership, sportsmanship, and individual and team play during the season. It is in memory of George Henry Richards of the Class of 1921 who died suddenly while a student at the College.

The Joseph Lojko Memorial Plaque. — This plaque is presented to that senior who most fully represents the qualities of Joseph Lojko. He must be a three-letter man, have a satisfactory scholastic record and show those qualities of enthusiasm and cooperation which make for leadership. An award in honor of Joseph Lojko of the Class of 1934, outstanding athlete who died while a senior in the College.

Academics Conspicuous Service Trophy. — This trophy is awarded to that student who during the past 12 months has made the most important, single contribution to the Academic Activities.

Academics Managers' Prize. — Fifty dollars in gold awarded annually to that Academics manager who fulfills his duties most efficiently.

Poetry Prizes. — Fifteen and ten dollar prizes are awarded to the authors of the best poems published in the *Collegian* during the year.

Interfraternity Leadership Cup. — This cup is awarded annually to the Fraternity which receives the highest average rating in scholarship, academics, and athletics for the entire year.

STUDENT ACTIVITIES AND ORGANIZATIONS.

No small part of the value received from four years of college is the training that one acquires through participation in student activities. Student organizations offer excellent opportunities for leadership in a wide variety of fields.

Student Government.

The Senate. — This is a student governing council. It is composed of representatives elected from the Junior and Senior classes. Besides acting as general director of undergraduate conduct it represents the interests of the students and the student body before the Faculty.

Adelphia. — This is a senior honorary society. The members are usually chosen from those who have been prominent in college activities. The society attempts in a quiet, unassuming way to mold student life on the campus.

The Honor Council. — The Honor System prevails at this college. The foreword of the Honor System reads as follows: "We, the students of the Massachusetts State College, believe that the goal of education is character. The man of character deals fairly with himself, and with others, and would rather suffer failure than stoop to fraud. The Honor System stands for this attitude in all relations of the students with the Faculty. In expression of our belief we pledge ourselves to the support of the constitution of the Honor System." Matters pertaining to the Honor System are in direct charge of the Student Honor Council, consisting of members elected from the four classes.

The Women's Student Council. — All appropriate matters pertaining to the

conduct of women students are under the control of this council. It is composed of members selected from the senior, junior, and sophomore classes by all the women students.

Academic Activities.

The College Musical Clubs include an orchestra, a band, and a glee club. These make various appearances during the year.

The Dramatic Club, the Roister Doisters, presents annually a revue and two plays, one in the winter, and the other at Commencement. There is a Debating Society which conducts both class and intercollegiate debates for both men and women. All academic activities are supervised by the Academic Activities Board composed of alumni, faculty, and students, and find recognition in semi-annual awards of gold and silver medals.

"The Massachusetts Collegian" is a weekly newspaper, published by the undergraduates of the college.

"The Index" is the college yearbook published by the members of the Junior class.

College Fraternities and Sororities.

There are several national and local fraternities represented on the campus. Rushing rules and general matters dealing with fraternity life are in charge of the Inter-fraternity Conference. This conference awards scholarships, a baseball cup, and a relay plaque to the winners of the Inter-fraternity Contests.

There are several local sororities and an Inter-sorority Conference which deals with affairs of interest to all of the societies.

Inter-Collegiate Athletics.

The College is represented in inter-collegiate athletics by teams in all the leading sports, including football, baseball, track, hockey, soccer, swimming and basketball. General policies governing athletics are in charge of the Athletic Board, composed of Alumni, Faculty, and students.

Professional Clubs.

There are several professional clubs established in connection with the various major courses of study. These clubs stimulate the students' professional interest in their chosen subject-matter fields and afford opportunity for discussion of technical subjects of mutual interest.

Religious Organizations.

Four religious organizations are active on the Campus: The Christian Federation, the Menorah Club (for Jewish students), the Newman Club (for Catholic students), and the Stockbridge Y (for two-year students). These four organizations unite in forming a Student Religious Council which strives both to further amity among the religious faiths and to promote religious activities and thinking in the student body. These various religious organizations are sponsored by a Faculty Committee on Religious Work and they are under the supervision of the Director of Religious Education. The College conducts a vesper service on each Sunday at five o'clock during the school year at which some of the great religious leaders of our country speak.

The Social Union.

The Social Union was established in 1907. All students become members of the Union in consideration of a small part of the Student Activities Fee. In the fall and winter months the Union gives a series of entertainments.

STANDARDS OF DEPORTMENT.

The customary high standard of college men and women in honor, self-respect and consideration for the rights of others constitutes the standards of student deportment.

The privileges of the college may be withdrawn from any student at any time, if such action is deemed advisable.

It should be understood that the college, acting through its president or any administrative officer designated by him, distinctly reserves the right, not only

to suspend or dismiss students, but also to name conditions under which students may remain in the institution. For example, if a student is not doing creditable work he may not only be disciplined but he may also be required to meet certain prescribed conditions in respect to his studies, even though under the foregoing rules his status as a student be not affected. The same provision applies equally to the matter of absences ("cuts"). According to the rules juniors and seniors are allowed a certain percentage of absences from class and other exercises. This permission, which implies a privilege and not a right, may be withdrawn at any time for any cause.

Similarly, also, it applies to participation in student activities. Though this will ordinarily be governed by the rules as already laid down, yet if, in the judgment of the college authorities, a student is neglecting his work on account of these activities, the privilege of participating in them may be withdrawn for such time as is considered necessary. Moreover, it may be withdrawn as a punishment for misconduct. Prospective students or their parents may, upon application, obtain a copy of the faculty rules governing student relations to the college.

FRESHMAN REGISTRATION.

All members of the incoming freshman class are required to be in residence on the campus for the period of September 20 to September 25, 1937, inclusive. This period is known as Freshman week. During this week will be given the several psychological examinations and tests required of freshmen. In addition physical examinations will be given to the men students. Such matters as pertain to schedule and section assignments will be taken care of at the same time. Lectures on student activities, college customs, and college curriculum will be given also. The object of this week is to introduce the new student into the college, so that only the minimum amount of time will be lost when the actual studies begin.

Admission to Collegiate Courses.

A. APPLICATION FOR ADMISSION.

Correspondence concerning admission should be addressed to the Dean's office.

Every applicant for admission to the college must be at least sixteen years old, and must present to the Dean proper testimonials of character, which, whenever possible, should come from the principal of the school at which the applicant has prepared for college. All applications for admission should be received at the Dean's office on or before June first of the year in which the candidate expects to enroll. Blanks for such application may be obtained by addressing the Dean of the college. All entrance credentials must be in the hands of the Dean before the applicant can matriculate.

B. MODES OF ADMISSION.

Students are admitted to the freshman class either upon certificate or upon examination. No *diploma* from a secondary school will be accepted.

Certificates. — The Massachusetts State College is affiliated with the New England College Entrance Certificate Board. Therefore certificates of admission will be accepted from schools approved by the Board. Certificates of admission will also be accepted from any Massachusetts school listed as class "A" by the State Department of Education, but not included in the approved list of the New England College Entrance Certificate Board. Principals of schools in New England who desire the certificate privilege should address the secretary of the Board, Professor Frank W. Nicolson, Wesleyan University, Middletown, Conn. Certificates from schools outside of New England may be received if those schools are on the approved list of the leading colleges of the section in which the school in question is located.

The credentials of the Board of Regents of the State of New York are accepted as satisfying the entrance requirements of this college when offered subject for subject, provided the grades are satisfactory.

Certificates in order to be accepted must present in the prescribed and restrictive elective groups at least three of the necessary fourteen and one-half units. It is to be understood, however, that responsibility for certification in either elementary French, elementary German, English 1 or English 2, Latin A, Greek A or Algebra, must be assumed by one school, if the candidate has received his preparation in any one subject named above in more than one school. Subjects lacking on certificate must be made up at the time of the examinations for admission. Conditions to the amount of two units will be allowed.

Blank forms for certification — sent to principals or school superintendents only — may be obtained on application to the Dean of the college.

Special Certificate Arrangement for Students from Agricultural Schools. — Superior graduates of Vocational Schools of Agriculture in Massachusetts and Vocational Agricultural Departments in Massachusetts High Schools may be accepted for the Degree of Vocational Agriculture provided: —

(*a*) they are unqualifiedly recommended by the Vocational Division of the Department of Education as *bona fide* Vocational Graduates with superior rank; and

(*b*) that they can present at least 14½ units of certified entrance, approved as to quality and quantity by the State Department of Vocational Education.

Admission by Four Comprehensive Examinations. — By this plan a candidate's qualifications for admission will be based upon the following considerations:

(*a*) School Record: A candidate must present to the Committee on Entrance a complete transcript of his secondary school course giving the subjects and the grades for the four years previous to college entrance, and a confidential estimate of character, personality, and promise of ability to do college work from the school principal. This should be sent to the Dean not later than May 1. The Committee must give its permission before the applicant may take the examinations.

(*b*) The following comprehensive examinations must be taken unless for satisfactory reasons the Committee allows a substitution for 3: —

1. English . . . . . three units.
2. Mathematics, either Mathematics Beta or Mathematics A.
3. A foreign language, selected by the applicant . two units.
4. A fourth subject designated by the applicant and approved by the Committee on Admissions.

These must be the College Entrance Examination Board Plan B examinations given in June. A candidate under this plan will be admitted without condition or refused admission. In the event that a substitution is allowed for foreign language the student must take at least one year of modern language in college without receiving college credit therefor.

C. EXAMINATIONS.

Entrance examinations for admission to the Massachusetts State College will be held at the following centers: —

In June . . . . Amherst, Stockbridge Hall, room 114.
Cambridge, Massachusetts Institute of Technology, Massachusetts Ave. entrance.

In September . . . Amherst, Stockbridge Hall, room 114.

Please note that September examinations are held in Amherst only.

Schedule for Entrance Examinations June 17–19, 1937.

First Day.

8.30 A.M. Algebra.
10.30 A.M. Chemistry.
2.00 P.M. History (ancient, medieval and modern, English, United States and Civics).

Second Day.

8.30 A.M. English 1 and 2.
11.30 A.M. Biology.
2.00 P.M. Plane Geometry.
3.30 P.M. Physics.

Third Day.

8.30 A.M. French, German, Spanish, required and elective.
1.00 P.M. Latin, elementary, intermediate and advanced. Solid geometry and Trigonometry.

Schedule for Entrance Examinations September 15–17, 1937.

First Day.

8.30 A.M. Algebra.
10.30 A.M. Chemistry.
2.00 P.M. History (ancient, medieval and modern, English, United States and Civics).

Second Day.

8.30 A.M. English 1 and 2.
11.30 A.M. Biology.
2.00 P.M. Plane Geometry.
3.30 P.M. Physics.

Third Day.

8.30 A.M. French, German, Spanish, required and elective.
1.00 P.M. Latin, elementary, intermediate and advanced. Solid geometry and Trigonometry.

D. REQUIREMENTS FOR ADMISSION.

The requirements for admission are based on the completion of a four-year high school course or its equivalent and are stated in terms of units. A unit is the equivalent for at least four recitations a week for a school year.

Fourteen and one-half units must be offered for admission in accordance with the entrance requirements outlined below. In some instances students are allowed to enter conditioned in not more than two units.

Entrance Requirements.

1. *Prescribed.* — The following units are required: —

Algebra	1½
Plane Geometry	1
English 1 (Grammar and Composition)	2
English 2 (Literature)	1
History	1
A foreign language	2
	8½

2. *Restricted electives.* — From two to six units selected from the following subjects: —

Mathematics and Science.

Solid Geometry	½
Trigonometry	½
Biology	1
*Botany	½ or 1
Chemistry	1
*Geology	½
*Physical Geography	½
Physics	1
*Physiology	½
*Zoölogy	½

History.

Ancient	1
English	1
Medieval and Modern	1
United States and Civics	1

Foreign Languages.

Elementary French	2
Elementary German	2
Elementary Spanish	2
Elementary Latin	2
*Elementary Greek	2
Intermediate French	1
Intermediate German	1
Intermediate Spanish	1
Intermediate Latin	1
*Intermediate Greek	1
Advanced French	1
Advanced German	1
Advanced Spanish	1
Advanced Latin	1

* No examinations given. To be offered for entrance credit on certificate only.

3. *Free margin electives* — not over four units. In case fourteen and one-half units cannot be presented in the prescribed and restricted elective groups, units not to exceed four may be offered as free margin electives. Credit in the free margin will be allowed for any substantial courses (agriculture, general science and fourth year English included) not listed under the prescribed and restricted elective groups for which credit of not less than one-half unit earned in one year

is given toward a secondary school diploma. Since no entrance examinations are given in these subjects they may be offered only on certificate.

E. OTHER INFORMATION ABOUT ENTRANCE.

1. If elementary algebra and plane geometry are counted as three units the total requirement for admission will be fifteen.
2. Both the credits under the prescribed and restricted elective groups must be presented either by certificate from an approved school or by examination or by a combination of both. Credit by certificate will not be accepted unless at least three units are offered.
3. Candidates are allowed to spread their entrance examinations over the three consecutive periods just previous to their entrance into college. A period means June to September of the same year.
4. Examinations for the removal of entrance conditions will be held during the second week of January.
5. All entrance conditions must be satisfied before a student is permitted to enter upon the work of the sophomore year.
6. The privileges of the college may be withdrawn from any student at any time if such action is deemed advisable, regardless of whether entrance was gained by certificate or examination.
7. The passing grade for an entrance examination is 60 per cent.

F. ADMISSION TO ADVANCED STANDING.

A student desiring to transfer to this college from another of recognized standing must present the following credentials: —

1. A letter of honorable dismissal from the institution with which he has been connected.
2. A statement or certificate of his entrance record.
3. A statement from the proper officer showing a complete record of his work while in attendance.
4. A marked catalogue showing the courses pursued.
5. A statement from the proper officer, giving the total number of credits required for graduation by the institution from which the applicant is transferring, and, of this total, the number that the applicant has satisfactorily completed at the time of the transfer.

The above credentials must be sent directly from the Registrar's office of the college from which the student is transferring. They should be addressed to the Dean of the Massachusetts State College. Applications will be judged wholly on their merits. The college may prescribe additional tests before accepting applicants or determining the standing to be granted them.

At least one year's work in residence is required of any student desiring to be recommended for the Bachelor of Science degree.

G. STATEMENT OF PREPARATION REQUIRED FOR ADMISSION.

Agriculture.

Entrance credit in agriculture is granted on the following basis: —

I. The Massachusetts State College accepts a maximum of four units in agriculture (except as described on page 20) from any secondary or county agricultural high school offering work in that subject, provided evidence of such work having been done is submitted on a principal's statement, as is indicated in the "free margin" group.

II. In high schools organizing agricultural club work under the supervision and rules of the junior extension service of the college, one credit is granted for each full year of work performed under the following plan: —

Work of the Winter Term. — (*a*) The study of textbooks such as are suitable for secondary school instruction in agriculture.

(*b*) Course of study: A general outline of suggested topics for study.

(*c*) Visits by a representative of the Massachusetts State College for observation, counsel and advice in regard to kind and amount of work being done in agriculture.

(*d*) Formation of an agricultural club with officers from among its own members,

meeting once a month under local supervision of someone authorized to act for the school authorities.

Work of the Spring Term. — Same in general form as winter term.

Work of Summer Term. — An approved project conforming to the rules of some one or more of the agricultural clubs of the junior extension service of the Massachusetts State College.

Work of the Fall Term. — (*a*) An exhibit of work.

(*b*) Reports and story of achievement submitted to the junior extension service of the college.

Biology.

The entrance examination in biology will cover the work outlined by the College Entrance Examination Board. This work should extend through one full year and include both laboratory and textbook study. The requirements are met by Hunter's *Civic Biology* and similar texts.

Botany.

For one unit of credit in botany, the work outlined in the statement of requirements issued by the College Entrance Examination Board, or its equivalent, will be accepted. This work should occupy one school year and include laboratory and supplementary textbook study. For one-half unit of credit, work that covers the same ground but occupies half the time required for a full unit of credit will be accepted. These requirements are met by such texts as Stevens' *Introduction to Botany* and Bergen & Davis' *Principles of Botany*. A notebook, containing neat, accurate drawings and descriptive records forms part of the requirement for either the half-unit or the one-unit credit. The careful preparation of an herbarium is recommended to all prospective students of this college, although the herbarium is not required.

Chemistry.

The entrance examination in chemistry will cover the work outlined by the College Entrance Examination Board as preparatory for college entrance. In general, this consists of a year of high school chemistry from any standard textbook, with laboratory work on the properties of the common elements and their simpler compounds. No particular work is prescribed. The keeping of a notebook is required.

Students who do not take chemistry in the preparatory school begin the subject in college.

Mathematics.

(*a*) *Required.* — Algebra: The four fundamental operations for rational algebraic expressions; factoring, determination of highest common factor and lowest common multiple by factoring; fractions, including complex fractions; ratio and proportion; linear equations, both numerical and literal, containing one or more unknown quantities; problems depending on linear equations; radicals, including the extraction of the square root of polynomials and numbers; exponents, including the fractional and negative; quadratic equations, both numerical and literal; simple cases of equations with one or more unknown quantities that can be solved by the methods of linear or quadratic equations; problems depending upon quadratic equations; the binomial theorem for positive integral exponents, the formulas for the nth term and the sum of the terms of arithmetic and geometric progressions, with applications.

Plane Geometry: The usual theorems and constructions of good textbooks, including the general properties of plane rectilinear figures; the circle and the measurement of angles; similar polygons; areas; regular polygons and the measurement of the circle; the solution of numerous original exercises, including loci problems; applications to the mensuration of lines and plane surfaces.

(*b*) *Elective.* — Solid Geometry: The usual theorems and constructions of good textbooks, including the relations of planes and lines in space; the properties and measurement of prisms, pyramids, cylinders and cones; the sphere and spherical triangle; the solution of numerous original exercises, including loci problems; applications to the mensuration of surfaces and solids.

Plane Trigonometry: A knowledge of the definitions and relations of trigonometric functions and of circular measurements and angles; proofs of the principal formulas and the application of these formulas to the transformation of the trigonometric functions; solution of trigonometric equations, the theory and use of logarithms, and the solution of right and oblique triangles. Students should bring logarithm tables to the examination.

Physics.

To satisfy the entrance requirement in physics, the equivalent of at least one unit of work is required. This work must consist of both classroom work and laboratory practice. The work covered in the classroom should be equal to that outlined in Hall & Bergen's *Textbook of Physics* or Millikan & Gale; the laboratory work should represent at least thirty-five experiments involving careful measurements, with accurate recording of each in laboratory notebook.

Physiology.

Hough & Sedgwick's *The Human Mechanism;* Martin's *The Human Body; Briefer Course.*

Zoölogy, Physical Geography, Geology.

The following suggestions are made concerning preparation for admission in the subjects named above: —

For physiography, Davis' *Elementary Physical Geography;* Gilbert & Brigham's *Introduction to Physical Geography.* For zoölogy, textbooks entitled *Animals* or *Animal Studies*, by Jordan, Kellogg and Heath; Linville & Kelley's *A Textbook in General Zoölogy.* For geology, A. P. Brigham's *A Textbook of Geology* or Tar's *Elementary Geology.*

History.

The required unit must be offered in either ancient history, medieval and modern history, English history, or United States history and civics. Either one, two or three elective units in any of the historical subjects here named may be offered, provided that no unit be offered in the same subject in which the required unit has been offered.

Preparation in history will be satisfactory if made in accordance with the recommendations of the committee of seven of the American Historical Association, as outlined by the College Entrance Examination Board. The examination will require comparisons and the use of judgment by the candidate rather than the mere use of memory, and it will presuppose the use of good textbooks, collateral reading and practice in written work. Geographical knowledge may be tested by requiring the location of places and movements on outline maps.

To indicate in a general way the character of the textbook work expected, the texts of the following authors are suggested: Botsford, Morey or Myers, in ancient history (to 814 A.D.); Adams, West or Myers, in medieval history; Montgomery, Larned or Cheyney, in English history; Fiske, together with Muzzey and West, in United States history and civics.

English.

The study of English in school has two objectives: first, the ability to use the English language, in both speech and writing, clearly, correctly and effectively; and, second, the ability to read English literature with understanding and appreciation.

(1) *Grammar and Composition* (Two Units). — The first objective makes necessary a rigorous and reiterated instruction in grammar and composition, with special emphasis upon: spelling, sentence structure, punctuation and paragraph development.

(2) *Literature* (One Unit). — The second objective is that of the progressive, four-year course in literature. The student should be trained to read aloud, to memorize significant passages, to associate the books with their historic background and to have well in hand both content and structure. He should be prepared to answer general questions upon poetry, the essay, prose fiction, the drama and biography by the presentation of varied and definite detail from such standard books as those recommended by the College Entrance Examination Board in its current

bulletin. However accurate in subject matter, no paper will be considered satisfactory if seriously defective in punctuation, spelling or other essentials of good usage.

The candidate may effect admission in English: by passing the College Entrance Examination Board's comprehensive examination (3 units), by certification, from an accredited school, in English 1 (2 units) and English 2 (1 unit); or by passing this college's examinations in these subjects in June or in September. Regardless of his method of admission, however, he will be gravely handicapped in his freshman English courses if inadequately prepared in any one of the three phases of study indicated in this statement.

Foreign Languages.

(French, Spanish, German, Latin, Greek.)

Two, three, or four* units of entrance credit in each of the above foreign languages may be presented by certificate or by written examination. Not less than two units (first two years) will be accepted in any one language.

No examination for a third or a fourth unit of credit in any language will be given unless the candidate has previously presented by certificate or by written examination the two or three preceding units respectively in that language.

The preparation expected for each of the above units is that stated in the Definition of Requirements of the College Entrance Examination Board.

* A maximum of three units may be offered in Greek. The college does not offer an entrance examination in Greek.

Collegiate Course of Instruction.

The course of study consists of four years of work planned to provide scientific foundation, cultural background, and professional training, and leads to the degree of Bachelor of Science (B.S.). The following six different major lines of specialization are provided: Agriculture; Horticulture; Home Economics; the Physical and Biological Sciences; the Social Sciences; and Physical Education (for men).

FRESHMAN YEAR.

The work of the freshman year consists of definitely required subjects, most of which are identical for all students, in order to insure a uniform preparation in the more fundamental collegiate subjects. However, some differentiation is required in order to properly introduce each student to some major line of work in which he may find his professional interest, and major faculty contacts. This course is presented below in tabular form.

Table of Freshman Subjects.

(Groups A and C of each semester are required of all freshman men, Groups A and D of all freshman women, and one of the options of Group B must be selected by each freshman to complete his year's program of study.)

Group		First Semester	Cr.	Second Semester	Cr.
A		English 1	3	English 2	3
		Mathematics 1†	3	Mathematics 2†	3
		Botany 1* or	4	Botany 1* or	4
		Chemistry 1 or 3*	4	Chemistry 1 or 3*	4
		History 1* or	3	History 1* or	3
		Orientation 1*	3	Orientation 1*	3
B	I	AGRICULTURE divisional electives			
		Animal Husbandry	3	Agronomy 2	3
	II	HOME ECONOMICS divisional electives			
		Home Economics 1	3	Home Economics 2	3
	III	HORTICULTURE and LANDSCAPE ARCHITECTURE divisional electives			
		Horticulture 1	3	Agronomy 2	3
	IV	PHYSICAL and BIOLOGICAL SCIENCE divisional electives			
		French 1 or 5 or 7	3	French 2 or 6 or 8	3
		German 1 or 5	3	German 2 or 6	3
	V	SOCIAL SCIENCE divisional electives			
		French 1 or 5 or 7	3	French 2 or 6 or 8	3
		German 1 or 5	3	German 2 or 6	3
	VI	PHYSICAL EDUCATION divisional electives			
		French 1 or 5 or 7	3	French 2 or 6 or 8	3
		German 1 or 5	3	German 2 or 6	3
C		Military 1	2	Military 2	2
		Physical Education 3	1	Physical Education 4	1
		Physical Education 1	1		
D		Freshman Course 5	1	Freshman Course 6	1
		Physical Education 7	2	Physical Education 8	2
		Physical Education 1	1		

† French or German is optional for Mathematics for students who intend to specialize in Home Economics.

* One semester of each required during freshman year.

SOPHOMORE YEAR.

The work of the sophomore year is also largely prescribed in order to insure as broad a cultural background as possible in preparation for the more specialized training of the last two years. Under the guidance of a major group advisory committee the student begins in this year certain optional choices of electives leading to the special courses of major work which he will later pursue. This course is presented on following page in tabular form.

Table of Sophomore Subjects.

(Groups A and C are required of all sophomore men; Groups A and D of all sophomore women; and two of the electives of Group B must be selected by each sophomore, with the approval of his major group advisory committee.)

Group		First Semester	Cr.	Second Semester	Cr.
A		English 25 and 29	3	English 26 and 30	3
		Economics 25 or	3	Economics 25 or	3
		Psychology 26	3	Psychology 26	3
		Sophomore Science	3	Sophomore Science	3
B	I	AGRICULTURE divisional electives			
		Dairy 25 or Poultry 25	3	Animal Husbandry 26	3
		Bacteriology 31	3	Mathematics 28	3
		Mathematics 27	3	Chemistry 32	3
		Chemistry 31	3	Agricultural Economics 26	3
	II	HOME ECONOMICS divisional electives			
		Home Economics 25	3	Home Economics 30	3
		Drawing 31	3	Home Economics 32	3
	III	HORTICULTURE and LANDSCAPE ARCHITECTURE divisional electives			
		Olericulture 25	3	Pomology 26	3
		Drawing 25	3	Drawing 26	3
		Botany 25	3	Entomology 26	3
		Chemistry 25	4	Floriculture 26	3
		Bacteriology 31	3	Horticulture 26	3
	IV	PHYSICAL and BIOLOGICAL SCIENCE divisional electives			
		Mathematics 27	3	Geology 28	3
		Physics 25	3	Mathematics 28	3
		Chemistry 25	4	Physics 26	3
		Zoölogy 25	3	Chemistry 26	4
		Botany 25	3	Zoölogy 26	3
		Chemistry 31	3	Physiology 32	3
				Chemistry 32	3
				Entomology 26	3
				Mathematics 26	3
	V	SOCIAL SCIENCE divisional electives			
		French 7, 29, or 31	3	French 8, 30, or 32	3
		German 25 or 27	3	German 26 or 28	3
		Sociology 27	3	Economics 26	3
		History 25	3	History 32	3
		History 27	3	Economics 28	3
	VI	PHYSICAL EDUCATION divisional electives			
		For those men specializing in Physical Education and Teacher-Coaching, electives from the Physical and Biological Science division should be selected; for those specializing in Recreation and Leisure-Time Training, electives from the Horticulture and Landscape Architecture division should be selected.			
C		Military 25	2	Military 26	2
D		Physical Education 27	2	Physical Education 28	2

JUNIOR AND SENIOR YEARS.

The work of the junior and senior years is, with certain restrictions, elective under the guidance of a special adviser, who is a member of the advisory committee of the major group which the student selects during his freshman year as his field for professional training. The aim of the last two years is to give to each student as high a degree of proficiency in some one branch of learning as is possible without sacrificing the breadth of knowledge and training which should characterize a well-rounded college course. In order to insure this result, each student is required to complete, during his last two years of study, certain requirements for specialization within his major group and certain minimum requirements in other groups:

I. Agriculture: Departments of Agricultural Engineering; Agronomy; Animal Husbandry; Dairy Industry; Agricultural Economics and Farm Management; Poultry Husbandry.
II. Home Economics: Department of Home Economics.
III. Horticulture: Departments of Floriculture; Forestry; Landscape Architecture; Horticultural Manufactures; Olericulture; Pomology.
IV. Physical and Biological Sciences: Departments of Bacteriology and Physiology; Botany; Chemistry; Entomology, Zoölogy, and Geology; Mathematics and Civil Engineering; Physics; Veterinary Science.

V. Social Sciences: Departments of Economics; Education and Psychology; History and Sociology; Languages and Literature.

VI. Physical Education: Department of Student Health; Physical Education for Men; Physical Education for Women.

For purpose of fulfilling the extra group requirements specified below, Groups I to III inclusive are regarded as a unit, since their work is comparable in field and character.

SPECIFIC REQUIREMENTS.

RULE 1. *Credits for Graduation.* — The minimum number of credits for graduation shall be 72 junior-senior credit hours, in addition to the satisfactory completion of the required courses of the freshman year and of the required and elective groups of the sophomore year.

RULE 2. *Credits Each Semester.*—Except upon special permission from the Scholarship Committee, no student shall enroll for more than 20 nor less than 16 credits each semester of his junior and senior years.

RULE 3. *Specialization.*—At the close of his sophomore year each student shall designate some department within his major group in which he desires to specialize, and shall complete, during his junior and senior years, not less than 18 and not more than 36 credits in junior-senior courses offered in that department. In special cases, with the approval of the student's special adviser and the Dean, this requirement may be satisfied by the selection of at least the minimum number of credits from two or more departments of closely related work.

RULE 4. *Requirements in Other Groups.* — Each student shall complete, during his junior and senior years, not less than 12 credits in other than his major group unit.

RULE 5. *Credit in Military Science and Tactics.* — Not to exceed 12 junior-senior credits in Military Science may be included in the minimum requirements for graduation.

RULE 6. *Advisers.* — The work of each student will be under the general supervision of his major group advisory committee from the beginning of his sophomore year, and during his junior and senior years under the immediate supervision of a special adviser who shall be some member of that committee and shall represent the department in which the student is to specialize under the terms of Rule 3. The adviser has full authority to prescribe the student's work required by Rules 3 and 4, and may advise the student with reference to his elections under Rule 7.

RULE 7. *Free Electives.* — Subject to the limitations imposed by Rules 2, 3, 4, and 5, each student may elect during his junior and senior years any courses offered in the catalogue for which he has the necessary prerequisite training.

RULE 8. *Registration.* — No junior or senior shall register until his course of study is approved by his adviser.

A card for recording the election of courses for each semester will be issued from the Schedule Room. This election card, properly filled out and signed, must be returned to the Schedule Room on or before April 15 of each year for first semester courses, and December 15 for second semester courses.

RULE 9. *Changing of Major Group.* — Application for change of major group can be made to the Dean in writing at any time, when approved by both major group advisory committees concerned and by the Dean and the Scholarship Committee, the change becomes operative at the beginning of the semester following, provided that no change in the selection of a major group may be made by any student after registration day of his senior year.

Description of Courses.

[Heavy-faced Roman numerals indicate the semester in which the course is given. Numbering of courses: 1 to 24, inclusive, freshmen; 25 to 49, inclusive, sophomores; 50 to 74, inclusive, juniors; 75 to 99, inclusive, seniors.]

SPECIAL COURSES FOR FRESHMEN.

1. **I and II.** Orientation Course. — The word orientation may be defined as "the determination of one's bearings or true position in relation to circumstances, ideas, etc." This course attempts to orient the student to the physical and social world in which he lives and works. The first part deals primarily with the nature of our universe and the method of thinking used by man in coming to an understanding of it. An attempt is made to establish a time and space perspective and to form a well defined conception of the cosmos and one's relation to it. A total viewpoint is sought. It is shown that this comes only through a synthesis of the contributions of many subjects, astronomy, geology, chemistry, physics, biology, etc. During the second part of the course the main theme is man in society. The student is made conscious of his own original nature and of the several institutions which serve that nature. The development of these institutions is traced. The student is urged to identify his own activities with them. There is also an introduction to some of the social problems man now faces because of his attempt to understand and control his physical environment and himself. This is really an orientation to the social sciences.

The central thought of the course is human life. The aim is to see life as a whole. Since this is the objective no attempt is made to teach the subject matter of any one science. Rather the course seeks to organize around the individual life the material from many sciences without considering the conventional lines separating one from the other. It suggests how from such an organization a fuller understanding of life may arise and how this may lead to the living of life more knowingly and abundantly. It is hoped that by this orientation the student may see unity in the mass and maze of college subjects and that he may be led to plan his course more intelligently. Theoretically, such an orientation should assist the student in organizing his future information and aid him at the end of his senior year in making the final synthesis of his four years of subject matter in terms of his own life.

3 class hours. Credit, 3.

Assistant Professor Lanphear.

5. **I.** College Adjustments. — For freshman women. A study of the experiences of everyday life in college, to help students recognize various social problems and think in terms of their solution.

1 class hour. Credit, 1.

Miss Skinner.

6. **II.** Vocational Opportunities for Women. — For freshman women. An outline of the occupational progress of women, with special attention to the opportunities for women in those vocations for which the Massachusetts State College gives foundation preparation.

1 class hour. Credit, 1.

Miss Hamlin.

DIVISION OF AGRICULTURE.

Professor Rice.

Agricultural Engineering.

Professor Gunness, Assistant Professor Markuson, Assistant Professor Tague, Mr. Pushee, Mr. Newlon.

The courses in agricultural engineering are planned to give a working knowledge of those phases of engineering which apply directly to the farm. It is expected that the student will acquire a clear understanding of modern farm practice as it relates to permanent improvements of the farm and the farmstead, and in the selection and use of farm equipment.

Elective Courses.

50. II. Shop Work. — For juniors; seniors may elect. This course gives instruction in the care and use of carpenters' tools through bench work, repair of farm equipment, and building construction. Practice in building forms, mixing and placing concrete, framing, cutting rafters, etc., make up this portion of the subject. Instruction in forging, pipe fitting, soldering, and the use of machinists' tools for the repair of farm machinery and miscellaneous farm equipment, together with a study of pumps and water supply systems make up the other portion of the work.

3 2-hour laboratory periods, credit, 3.
Mr. Pushee and Mr. Newlon.

51. I. House Planning and Construction. — For juniors; seniors may elect. Plan designs of the small house will be made. The arrangement of interior equipment, especially in the kitchen, lighting, heating, water supply, and sewage disposal will be studied, together with a brief history of the house, materials, construction methods, equipment, and architectural styles. Consideration will be given to the economics of house building, including financing and to maintenance and overhead expense.

1 class hour. 2 2-hour laboratory periods, credit, 3.
Assistant Professor Markuson.

52. II. Rural Sanitary Equipment. — For juniors; seniors may elect. This course deals with the problems of water supply, sewage disposal, and ventilation which pertain to the farm and small community. Careful studies are made of water systems and sewage disposal plants and their adaptability to various conditions.

1 class hour. 1 2-hour laboratory period, credit, 2.
Assistant Professor Markuson.

60. II. Household Equipment. (1937–38). — For juniors and seniors. A study of the selection, operation, care, and efficient arrangement of equipment, with an analysis of the time and energy required in various processes. Given in alternate years.

2 class hours. 1 2-hour laboratory period, credit, 3.
Assistant Professor Tague.

71. I. Motors. — For seniors; juniors may elect. The course deals with the gasoline engine as used for stationary work, automobiles, and tractors. The theory of the internal combustion engine is taken up in order to emphasize the effect of design and operation on power and economy. The various types of carburetors, ignition, and lubrication systems are studied in detail. Instruction is given by means of lectures and textbooks, and by operating and repairing stationary engines, automobiles, and tractors. Special attention is given to overhauling and repairing. This course also deals with the application of electricity to farm operations including wiring and electric motors, and refrigeration equipment as used on New England farms.

3 2-hour laboratory periods, credit, 3.
Assistant Professor Tague and Mr. Pushee.

72. II. Drainage and Irrigation Engineering. — For seniors; juniors may elect. The course covers the engineering phase of drainage and irrigation. The various systems are studied, and practice is given in the design of drainage and irrigation systems. Field work gives practice in surveying for drains, platting, locating drains, erecting batterboards, and laying tile. Practice is given in assembling equipment for spray irrigation, and the flow of water through nozzles is studied by means of laboratory tests.

1 class hour. 1 2-hour laboratory period, credit, 2.
Assistant Professor Markuson.

74. II. Farm Structures. — For seniors; juniors may elect. A study of the strength and durability of concrete, wood, stone, and clay products, and of the mechanical principles underlying their use in farm construction. The design of various farm buildings, such as the general purpose barn, dairy stable, hog house,

sheep barn, milk house, etc. In the drafting room, details of construction will be worked out, a study of the mechanics of simple roof trusses will be made, and a complete design of some major farm building will be finished in all essential details. Blueprints of the finished design will be made.

1 class hour. 2 2-hour laboratory periods, credit, 3.
Assistant Professor Markuson.

80. II. Dairy Mechanics (1937–38). — For juniors; seniors may elect. A study of dairy machinery, including steam boilers, engines, pumps, traps, refrigeration machinery, and heat-controlling devices. Practice is given in pipe fitting, packing valves, lacing belts, and similar repair jobs on the equipment used in dairy plants. Given in alternate years.

1 class hour. 1 2-hour laboratory period, credit, 2.
Assistant Professor Tague and Mr. Newlon.

83. I and II. Agricultural Engineering Problems. — Open only to seniors specializing in the department. This course consists of individual problems chosen by the students under guidance of the department. The work is of an advanced nature, supplementing that of the regular agricultural engineering curriculum. Copy of project outline, indicating the number of credits, must be filed with the department and with the Dean at the opening of the semester.

Credit, 3.
The Department.

85. I. Rural Electrification (1936–37). — For seniors; juniors may elect. This course is planned primarily for students who are interested in the application of electricity to agriculture. It includes a study of the generation and distribution of electricity for light and power. Special emphasis is placed on the utilization of electricity on the farm and in rural communities. Given in alternate years.

2 class hours. 1 2-hour laboratory period, credit, 3.
The Department.

Agronomy.

Professor Eisenmenger, Assistant Professor Dickinson, Mr. Thayer, Mr. Isgur, Mr. Everson.

The courses in agronomy are designed to give instruction concerning the basic knowledge of the soil and its management, fertilizers and their use, and the principal products of the field. An important objective of our undergraduate teaching is to give supporting training to groups specializing in other departments. For undergraduates desiring to specialize in agronomy adequate courses are offered, but for those expecting to go into advanced educational or research work our graduate training is recommended as preferable.

Elective Courses.

2. II. Soils. — A general course for freshmen in soils and soil management with especial emphasis on their relationship to crop growth. This course is designed to give the student who does not intend to go further in soil studies, a broad background in soil science and its direct application to practical field problems. The course itself is presented with the object of introducing to the student (a) the physical, (b) the chemical, and (c) the biological properties of the soil and their influence upon the economic production of crops. The laboratory work is designed with the purpose of furnishing direct evidence and a better understanding of the lecture material. Indicators and principles of soil fertility are stressed and part of the time is devoted to fertilizer studies and practices.

2 class hours. 1 2-hour laboratory period, credit, 3.
Mr. Isgur.

51. I. Field Crops. — For juniors and seniors. A study of methods and problems of production of field crops important in New England. The successful production of good forage is essential to profitable dairy farming. Special emphasis will be given hay, pasture, and other crops important in dairy farming.

2 class hours. 1 2-hour laboratory period, credit, 3.
Mr. Isgur.

52. **II.** Soil Utilization. — For juniors and seniors. A course intended primarily for those not having had other courses in soils. It deals with the nature and properties of soil types, their adaptation to crops, and special problems arising in the management of extreme soil types.
3 class hours. Credit, 3.
Mr. Isgur.

54 **II.** Turf and Forage Grasses. — For juniors and seniors. Designed to give a practical working knowledge of fine turf and forage grasses. The identification of seeds and plants, their ecology and relative value will be emphasized.
2 class hours. 1 2-hour laboratory period, credit, 3.
Assistant Professor Dickinson.

77. **I.** Crop Improvement. — For seniors. Theory and practice of the improvement of field crops by breeding and selection.
2 class hours. 1 2-hour laboratory period, credit, 3.
Mr. Isgur.

Prerequisite, Agronomy 51.

78. **II.** Fertilizers. — For seniors; juniors may elect. A study of the source, properties, and behavior of commercial fertilizers and soil amendments. Attention will be given to such questions as home-mixed versus commercial fertilizers, the use of concentrated materials, and the economical purchase of fertilizers.
2 class hours. 1 2-hour laboratory period, credit, 3.
Professor Eisenmenger.

82. **II.** Special Problems in Agronomy. — For seniors taking major work in agronomy.
3 2-hour laboratory periods, credit, 3.
Professor Eisenmenger.

Animal Husbandry.

Professor Rice, Assistant Professor Glatfelter, Assistant Professor Parsons, Assistant Professor Foley, Mr. Hillier.

The courses in animal husbandry are designed to give the student a thorough grounding in the scientific, practical, and commercial phases of horse, sheep, swine, beef, and dairy cattle production. The choice of supporting courses is governed by the student's ultimate objective. Upon completion of the four years' course, three general fields are open to the graduate. First, the practical field comprising the actual production of livestock and its products or the management of livestock farms; second, the professional field which embraces college, secondary school, or extension teaching, or federal, state, or commercial research; and third, the commercial field comprising all phases of the meat-packing, milk-production, wool or feed industries, including connections with the large companies, farmers' cooperative associations, or the operation of local plants.

Elective Courses.

1. **I.** Types and Market Classes of Livestock. — For freshmen. This course is designed to acquaint the student with the broad aspects of the livestock industry in the United States. It begins with a study of markets and market demands for cattle, sheep, swine, and horses, and then considers the selection and operation of the breeding herd. It also serves as a survey course showing the magnitude of the livestock industry and the importance of livestock and their manifold products in a modern, civilized state. Practice in judging and handling all classes of livestock is provided in the laboratory periods.
2 class hours. 1 2-hour laboratory period, credit, 3.
Professor Rice.

26. **II.** Breeds of Livestock and Dairy Cattle Judging. — For sophomores. This course is designed to acquaint the student with the history, development, characteristics, and present status of all the breeds of cattle, horses, sheep, and swine commercially important in the United States. Special attention will be paid to the breeds maintained on the college farm. During April and May trips will be taken on Saturdays to the leading herds of dairy cattle in New England.

The three highest ranking students in advanced judging will represent the college in the intercollegiate Dairy Cattle Judging Contests at the Eastern States Exposition and the National Dairy Show the following fall.

2 class hours. 1 2-hour laboratory period, credit, 3.
Assistant Professor Foley.

51. I. The Nutrition of Farm Animals. — For juniors. This course is designed to give the student an understanding of the mechanics of digestion, absorption, circulation, respiration, and excretion; the functions of proteins, carbohydrates, fats, vitamins, and minerals in body metabolism; the functions of those endocrine glands primarily concerned with nutrition; the nature and value of the various feed stuffs; and methods of calculating rations in order to meet the requirements of various classes of livestock.

2 class hours. 1 2-hour laboratory period, credit, 3.
Mr. Hillier.

52. II. The Breeding and Improvement of Farm Animals. — For juniors. This course is planned to acquaint the student with the facts of reproductive physiology, with the facts and theories of modern genetics, and to show how such knowledge may be utilized for the creation of more beautiful and more efficient animal types.

3 class hours. Credit, 3.
Professor Rice.

53. I. Meat and Meat Products. — For juniors. This course serves as an introduction to the fields of meat packing and farm slaughter. It embraces a study of the magnitude and trends of the meat industry, livestock markets and market grades of livestock, utilization of by-products and opportunities for local New England marketing. Laboratory practice is given in the slaughtering of beef cattle, hogs, sheep, and veal calves, in preparing them into wholesale and retail cuts, and in the curing and smoking of meats.

1 class hour. 2 2-hour laboratory periods, credit, 3.
Assistant Professor Foley.

56. II. Beef and Sheep Production and Livestock Judging. — For juniors. This course includes studies of the development of the beef and sheep industries, situation and outlook, phases of production, systems of management, herd and flock improvement, feeding, management, breeding, equipment, and fitting and showing. Practice in judging the various classes of fat stock and horses is given, and during April and May trips are taken to the leading herds and flocks in New England. The five highest ranking students in the judging work represent the college in the Intercollegiate Livestock Judging Contests at the Eastern States Exposition and the International Livesock Exposition the succeeding fall.

2 class hours. 1 4-hour laboratory period, credit, 4.
Mr. Hillier.

73. I. Advanced Meat Studies and Judging. — For seniors. This course is designed to impart a knowledge of the fundamental principles involved in judging, buying, and efficiently utilizing meat and meat products. One laboratory per week will be devoted to actual judging in nearby packing plants. The three highest ranking students will be chosen to represent the college at the intercollegiate meat judging contest, International Livestock Show, Chicago, in November.

2 2-hour laboratory periods, credit, 2.
Assistant Professor Foley.

75. I. Horse and Swine Production. — For seniors. This course includes a study of the development of the breeds of draft and light horses and swine, and a study of the economic, genetic, nutritional, and managerial problems concerned in producing these classes of livestock with particular reference to New England conditions. Practice is also given in fitting and showing and in livestock judging.

2 class hours. 1 4-hour laboratory period, credit, 4.
Mr. Hillier.

78. II. Dairy Cattle and Milk Production. — For seniors. This course embraces all phases of dairy cattle production and management. It affords an opportunity to seek the solution to the economic, nutritional, genetic, and managerial problems concerned in successful dairying. One period a week will be devoted to talks by outside specialists in the various fields. Laboratory work will consist of a detailed study of methods used on the college farm and opportunities to practice and achieve the various skills necessary to the herdsman or showman.

4 2-hour laboratory periods, credit, 4.
Assistant Professor Foley.

81. I. Animal Husbandry Seminar. — For seniors. This is essentially a problem course. Each student will select his own problem in the broad field of animal husbandry, report his progress occasionally to the group, and prepare a final paper covering all phases of the problem.

1 2-hour laboratory period, credit, 1.
Professor Rice.

82. II. Animal Husbandry Seminar. — For seniors. Students will prepare original papers and talks on various pertinent topics. Round table discussions of animal husbandry investigational work and practices will be conducted.

1 2-hour laboratory period, credit, 1.
Professor Rice.

91. I. Genetics and Eugenics. — For juniors and seniors. This course is open to students other than those specializing in animal husbandry, and deals with the general problems concerned in human reproduction and inheritance. The main topics studied will consist of the physiology of reproduction, the physical basis of inheritance, and the mode of transmission of human characteristics. Consideration will also be given to such questions as the causes of variation, the relative importance of genetic and environmental influences, the mechanism of sex determination, as well as population trends, sterilization and kindred eugenic problems.

3 class hours. Credit 3
Professor Rice.

Dairy Industry.

Professor Frandsen, Assistant Professor Mack, Mr. Lindquist.

The courses in dairy industry are offered to meet the needs of students interested in the scientific study of handling market milk, and the making of ice cream, butter, cheese, and other dairy products; agricultural college teaching, and experiment station work; high and secondary school teaching; extension work; research and investigational work.

Elective Courses.

25. I. General Dairying. — For sophomores. A general course, introductory to all other courses in dairy industry, and for those who wish to take only one course in dairying to get a general knowledge of the subject. The work covers briefly: a study of milk, its secretion, composition, and various tests applied thereto; methods of pasteurizing and handling milk and cream; the use of separators; elements of ice cream, butter, and cheese making.

2 class hours. 1 2-hour laboratory period, credit, 3.
Professor Frandsen and Mr. Lindquist.

50. II. Judging Dairy Products. — For juniors; seniors may elect. A study of market standards and grades of dairy products, with practice in judging milk, ice cream, butter, and cheese. The student learns to recognize quality in dairy products, to detect specific defects, and to know their causes and the means of their prevention. A team is chosen from this class to represent the college in dairy products judging contests at the Eastern States Exposition and the National Dairy Industries Exposition.

1 2-hour laboratory period, credit, 1.
Assistant Professor Mack and Mr. Lindquist.

52. II. Market Milk. — For juniors; seniors may elect. A study of the various phases of the market milk industry: sanitary production, transportation, pasteurization and handling in the city plant, marketing, delivery systems, milk and its relation to public health, inspection, milk laws, food value, and advertising. Cultured milk and other milk drinks also are included. Some milk plants are visited, the cost of the trip not exceeding five dollars.
2 class hours. 2 2-hour laboratory periods, credit, 4.
Mr. Lindquist.

75. I. Dairy Chemistry. — For juniors and seniors. The various physical and chemical properties of milk, milk products, and their components are studied. Testing and control methods commonly used commercially for milk and dairy products are included; moisture and fat determination, casein, salt, and acid tests, work with the Mojonnier apparatus, and other applied chemical tests are taken up in the laboratory.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Assistant Professor Mack.

77. I. Butter and Cheese Making. — For juniors and seniors. The first half of the semester is devoted to butter making, the remainder to cheese making, condensed and powdered milks. The various phases of the butter industry studied are: separators and cream separation; pasteurization, neutralization, and ripening of cream; preparation of starter cultures; churning, marketing, and scoring of butter; creamery management. The work in cheese making includes Cheddar, cream Neufchâtel, cottage, processed cheeses, etc. The manufacture of condensed and powdered milk, and commercial casein is also covered.
2 class hours. 2 3-hour laboratory periods, credit, 5.
Assistant Professor Mack and Mr. Lindquist.
Prerequisite, Dairy 25.

78. II. Ice-Cream Making. — For juniors and seniors. The course includes a study of the principles and practices of ice-cream making. The effects of such factors as composition, quality, pasteurization, homogenization, aging, and freezing on the finished product are considered. Sherbets, ices, fancy and individual forms, and all flavors of ice cream are studied. Some time is devoted to refrigeration machinery, delivery equipment, and merchandising methods as they are related to the industry.
2 class hours. 2 2-hour laboratory periods, credit, 4.
Assistant Professor Mack.

79. I. 80. II. Seminar. — For students specializing in dairy industry. The course consists of a study of research done by the experiment stations, also a review of foreign literature. Students prepare papers on timely dairy subjects. Frequent addresses are made to the class by visiting authorities in dairying.
1 class hour. Credit, 1.
Professor Frandsen.

Agricultural Economics and Farm Management.

Professor Lindsay, Assistant Professor Barrett.

The agricultural economics and farm management curriculum is planned to provide a training not only for those proposing to enter actual farm production but also those fields of business closely related to agriculture. With the rapid development of business allied to agriculture there has arisen a demand for agriculturally trained men in many sections of the commercial world. Such lines as marketing of milk and other dairy products, fruit and vegetable distribution, feed and fertilizer manufacturing and marketing, canning and food preservation, agricultural machinery development and utilization, and meat packing and distribution are offering opportunities for graduates trained in agricultural business. The agricultural division of banks, insurance companies, railroads, and similar organizations have openings for agricultural students of statistical and business training. The fields of research, extension, and teaching, in state and federal institutions and secondary schools, provide further openings for graduates of agricultural economics and farm management.

Elective Courses.

26. **II.** Economics of Agricultural Production. — For sophomores. The principles of production economics applied to agriculture, special emphasis being placed upon specialization, combination of the factors of production, and diminishing and increasing inputs and outputs.
3 class hours. Credit, 3.
Assistant Professor Barrett.

55. **I.** Marketing Farm Products (1936–37). — For juniors and seniors. An analysis of the present system of assembling, transporting, storing, and distributing farm products as a basis for intelligent direction of efforts in increasing the efficiency of marketing methods. Given in alternate years.
3 class hours. Credit, 3.
Professor Lindsey.

56. **II.** The Fundamentals of Cooperation. — For juniors and seniors. A study of the principles of organization, management, and operation of cooperative associations. Special emphasis is placed upon types of organization, methods of formation, financial and operating policies, membership relations, sales methods and policies, and public relations.
3 class hours. Credit, 3.
Professor Lindsey.

57. **I.** Agricultural Credit and Land Appraisal (1937–38). — For juniors and seniors. A study of the development, use, functions, and operations of public and private credit institutions which are available to agriculture. Special emphasis is given to the practical aspects of credit policy and land appraisal. Given in alternate years.
3 class hours. Credit, 3.
Professor Lindsey.

71. **I.** Agricultural Economic Theory (1936–37). — For juniors and seniors. The course is a comparative and critical study of the significant contributions of the leading economists to the theory of agricultural economics from the time of Adam Smith to the present. Given in alternate years.
3 class hours. Credit, 3.
Professor Lindsey.

75. **I.** Farm Organization. — For seniors. This course analyzes the functions of the farmer as a business proprietor. Some of the problems and principles considered are: choice and combination of farm enterprise, least cost and highest profit, farm and building layout, the economical use of funds, farm credit, adjustments of production and price cycles as affecting farm organization. Records of the organization of actual farms are studied and analyzed.
3 class hours. Credit, 3.
Assistant Professor Barrett.
Prerequisite, the required freshman and sophomore work in agriculture or horticulture, or the permission of the instructor.

76. **II.** Farm Operation and Advanced Farm Organization. — For seniors. The first part of this course further develops the principle of opportunity costs, and includes the use of farm records and accounts as a basis for planning and budgeting, "scientific management" as applied to efficient farm technique, and the execution of the plans and policies of the organization. The last part of the semester will be given over to a more specific study of the principles and practices outlined in Course 75, with special reference to their application to selected farms. Field trips are required. The approximate expense for travel is five dollars.
1 class hour. 1 4-hour laboratory period, credit, 3.
Prerequisite, Agricultural Economics, 75. Assistant Professor Barrett.

79. **I.** Principles and Methods of Statistics. — For seniors and graduate students; juniors may elect. Methods of collecting, analyzing, interpreting, and presenting statistical information. The application of statistical methods to the fields of agriculture, economics, education, business, and industry is emphasized through practical laboratory problems.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Professor Lindsey.

80. **II.** Advanced Statistics. — For seniors and graduate students. This course deals with the use of statistics in the analysis of economic data with special emphasis upon prices; the use of multiple correlation methods in the study and analysis of prices of agricultural and certain other commodities.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Professor Lindsey.

82. **II.** Advanced Farm Operation. — For seniors majoring in agriculture; others by permission of instructor. A study of the efficiency of operations on a specific farm. An original semester paper will be required.
3 hours or equivalent. Credit, 3.
Assistant Professor Barrett.

89. **I.** 90. **II.** Seminar. — For seniors majoring in agriculture; others by arrangement. Farm management and agricultural economic problems will be considered from the viewpoint of research, extension, and teaching.
1 class hour. Credit, 1.
The Department.

Poultry Husbandry.

Professor Graham, Professor Sanctuary, Assistant Professor Banta, Mr. Vondell.

The department aims to give instruction in the science, art, and practices of poultry keeping not only to the men majoring in this department, but also to students majoring in other departments and desiring supporting courses in poultry husbandry. Our major courses prepare men for the successful operation of commercial poultry farms and marketing projects either as owners or managers; for graduate work, teaching, extension and investigational work.

Elective Courses.

25. **I.** Poultry Judging. — For sophomores. A study of the origin and evolution of our standard breeds and varieties of domestic fowl; judging production quality, using trapnested birds; judging exhibition quality by score card and comparison. One or more poultry farms, an egg-laying contest, and a poultry show will be visited. Poultry judging teams competing in the intercollegiate contest each January are trained in this course.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Assistant Professor Banta.

51. **I.** Poultry Feeds and Feeding. — For juniors; seniors may elect. A study of the common feeds and the scientific principles underlying the field of nutrition. Recent experimental work and current feeding problems will receive special consideration. For observational practice and accumulation of original data, the management of a group of birds will be required for a period of a few weeks.
3 class hours. 1 2-hour laboratory period, credit, 4.
Professor Graham.

52. **II.** Incubation and Brooding. — For juniors; seniors may elect. A study of the fundamental principles underlying incubation and brooding practices. The science of physics and general biology is applied to the study of incubation and brooding processes. Students become thoroughly acquainted with modern incubation and brooding equipment through detailed study and operation of typical incubators and brooders. Present-day problems are considered and some are investigated as a part of the class work.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Professor Sanctuary.

54. **II.** Poultry Housing and Sanitation. — For juniors; seniors may elect. A consideration of the biological needs of poultry from the standpoint of housing, and the economic principles governing designing and construction of poultry houses and equipment for poultry farm buildings. The course also embodies a study of the principles of poultry sanitation, including external parasites and the insecticidal agents for their control.
1 class hour. 1 2-hour laboratory period, credit, 2.
Professor Sanctuary.

75. I. Market Poultry and Poultry Products. — For seniors. A study of market classes of poultry and eggs; preparation of poultry products for market; requirements of different markets; methods of marketing, involving a study of distribution, finances, and business organizations; cold storage and transportation; advertising, prices, and food values. Laboratory exercises in candling, packing, killing, dressing, and similar operations to make the above named factors more concrete. Students are required to fatten pens of chickens, keeping accurate data of the gains in weight and quality, also the costs of feed and labor, and resultant profit or loss. When possible, a short trip to Springfield is arranged to study the handling of poultry products in the local market.

1 class hour. 1 2-hour laboratory period, credit, 2.
Mr. Vondell.

77. I. Poultry Breeding. — For seniors. Methods of selection and improvement of poultry are developed through the study of the principles of heredity. Most of the course centers around the progeny test and pedigree method of breeding. Students taking this course participate in the college plant selection in pedigree work. Three breeds of poultry, each pedigreed for from seven to twenty years, furnish practice materials. A trip to some college or institution doing experimental work in breeding is required of students taking this course.

2 class hours. 1 2-hour laboratory period, credit, 3.
Professor Sanctuary.

78. II. Poultry Farm Organization. — For seniors. This course embodies the application of economic and business principles to poultry farming. The place and importance of the various branches of well-organized poultry farms and their relation to each other receive special consideration; also the study of surveys and production costs. A trip covering three or more days will be made to representative successful poultry farms. The expense per student is approximately fifteen dollars. This trip is required of each student taking the course for credit.

1 class hour. 1 2-hour laboratory period, credit, 2.
Prerequisite, Poultry 77. Assistant Professor Banta.

80. II. Farm Poultry. — For seniors; juniors may elect. For those students who desire a general knowledge of poultry husbandry but who cannot devote more than one term to the subject; it is not intended for students specializing in poultry, and such students are admitted only by special permission. Emphasis is placed on the farm flock and its economic management. Housing, culling, feeding, hatching, rearing, production, marketing, disease control, record keeping and flock management receive special consideration.

2 class hours. 1 2-hour laboratory period, credit, 3.
Assistant Professor Banta.

81. I. 82. II. Poultry Problems. — For seniors only. This course consists of individual problems chosen by the students under guidance of the department. The work is of an advanced nature, supplementing that of the regular poultry curriculum. Copy of project outline, indicating the number of credits, must be filed with the department and with the Dean at the opening of the semester. Two hours are required in the second semester. Two additional hours may be elected in the first or second semesters.

Credit, 1 to 4.
The Department.

DIVISION OF HOME ECONOMICS.

Professor Skinner.

Home Economics.

Professor Skinner, Professor Mitchell, Associate Professor Knowlton, Assistant Professor Briggs, Assistant Professor Coolidge.

The home economics courses offered are planned to meet the needs of (1) those students who are interested in education for homemaking as an integral part of the general education of women; (2) those who are interested in professional or vocational work in which an understanding of home economics is fundamental; (3) those who are interested in preparing for home economics extension service, both junior and adult; (4) those who wish to enter a graduate school leading to profes-

sional work. Other departments offer courses planned especially for students in home economics, as follows: Household Equipment, also House Planning and Construction in the Department of Agricultural Engineering; General Design in the Department of Landscape Gardening; Food Preservation in the Department of Horticultural Manufactures; and Amateur Floriculture in the Department of Floriculture.

Elective Courses.

1. **I.** Introduction to Home Economics. — For freshmen. A study of women in the modern world and the share which women have had in social progress, in order that each student may recognize the importance of her relationships to her family and community group.
3 class hours. Credit, 3.
Professor Skinner.

2. **II.** Clothing Selection. — For freshmen. A study of the principles of clothing selection in order to assist each student to choose satisfactorily line, color, and texture.
2 class hours. 1 2-hour laboratory period, credit, 3.
Assistant Professor Briggs.

25. **I.** Textiles. — For sophomores. A study of fibers, yarns, and fabrics with the aim of developing good judgment in the buying and using of clothing and house furnishing materials.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Assistant Professor Briggs.

30. **II.** Foods. — For sophomores. A study including fundamental principles and comparative methods of food preparation with emphasis on the nutritional and economic aspects of foods.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Associate Professor Knowlton.

32. **II.** Applied Design. — For sophomores. Applications of the principles of design are worked out in specific problems, using various media. Much opportunity is allowed for individual expression. The estimated cost of materials used is five dollars. Students provide all materials subject to the approval of the instructor.
3 2-hour laboratory periods, credit, 3.
Prerequisite, Drawing 31. Assistant Professor Briggs.

51. **I.** Foods. — For juniors. Advanced food study with especial emphasis on economy in expenditure of money, time, and labor.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Prerequisite, Home Economics 30. Associate Professor Knowlton.

52. **II.** Nutrition and Dietetics. — For juniors. A study of food needs of the body under varying conditions of size, activity, age and health, and the value of different foods in contributing to these needs. Special emphasis is placed on the relationship of the nutritive value of food to its cost.
2 class hours. 2 2-hour laboratory periods, credit, 4.
Prerequisite, Home Economics 51. Associate Professor Knowlton.

61. **I.** Clothing Selection and Construction. — For juniors. A study of art principles as they apply to clothing design. Principles of construction are given through the use of commercial patterns and flat pattern work in the making of garments. Students provide all materials subject to the approval of the instructor.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Assistant Professor Briggs.

62. **II.** Home Furnishing. — For juniors. A study of the fundamental principles which underlie the successful planning and furnishing of a satisfying home. Many applications of these principles are worked out in practical problems. Class trips will be taken at an estimated expense of two dollars.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Assistant Professor Briggs.

75. **I.** Economics of the Household. — For seniors. A study of personal and family standards of living in the modern home, the economic relations of the household, and the use of time, energy, and money as a means to influence the home situation.
3 class hours. Credit, 3.
Assistant Professor Coolidge.

77. **I.** or **II.** Home Management Practice. — For seniors. This course provides an opportunity for a student to assume responsibilities involved in managing a home.
Credit, 4.
Assistant Professor Coolidge.

81. **I.** Methods of Teaching Home Economics. — For seniors, by arrangement with the head of the division. A study of educational problems as applied to the teaching of home economics in junior and senior high schools. This course gives credit toward state certification. A few required trips, estimated cost three dollars.
2 class hours. 1 2-hour laboratory period, credit, 3.
Associate Professor Knowlton.

83. **I.** 84. **II.** Problems in Home Economics. — For seniors by arrangement with the Head of the Division. An intensive application of home economics to special problems. For students particularly interested in the teaching of home economics, there may be an opportunity for observation and practice teaching under supervision.
2 class hours. 1 2-hour laboratory period, credit, 3.
The Department.

86. **II.** Child Development. — For seniors. A study of the growth and development of the child, the care of children at various ages, treatment in behavior problems, and the influence of environment in shaping personality. Field trips at an estimated cost of two dollars.
3 class hours. Credit, 3.
Assistant Professor Coolidge.

87. **I.** Advanced Clothing Problems. — For seniors. Costume designing and modeling give opportunity for experimentation in designing. Students provide all materials subject to the approval of the instructor.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Assistant Professor Briggs.

89. **I.** Diet Therapy. — For seniors. This course offers a brief outline of the causes, symptoms, and general treatment of the various diseases in which the nutritional condition of the patient has significance. The course includes the dietetic treatment and control of gastro-intestinal disorders, obesity, cardo-vascular-renal diseases, anemia, fevers, diabetes, food allergy and the deficiency diseases. Field trips are planned to the dietetic departments of nearby hospitals.
3 class hours. Credit, 3.
Professor Mitchell.
Prerequisite, Home Economics 52; Chemistry 79.

91. **I.** 92. **II.** Institutional Foods and Management. — For qualified seniors interested in institutional work. This includes a study of the principles of organization, personal management, the administration of the food department, food costs, operating expenses, and the special function and duties of the dietitian. Laboratory work will be at the College Dining Hall and in various other institutions in the vicinity. It is expected that students will enroll for the work of both semesters. Enrollments limited.
1 class hours. 2 2-hour laboratory periods, credit, 3.
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DIVISION OF HORTICULTURE.

Professor Van Meter.

Floriculture.

Professor Thayer, Assistant Professor Hubbard, Mr. Ross.

The courses are intended to give the student a general knowledge of the various fields of floriculture, greenhouse design, construction, heating and management, methods of culture and uses of florists' crops (under glass and outdoors), floral decoration and arrangement, and the marketing of plants and flowers. The department aims primarily to train students so that they may take up (1) various phases of commercial floriculture, (2) positions in nursery establishments, (3) the management of conservatories, (4) private estate work, (5) positions in professional work.

Elective Courses.

26. II. Garden Materials. — For sophomores; juniors and seniors may elect. A study of the annuals, biennials, herbaceous perennials, bulbs, bedding plants, and roses that are valuable for use in floricultural or landscape gardening work. Methods of propagation, culture, and uses of the various plants are considered; identification of materials; lectures, assigned readings, and reports.
2 class hours. 1 2-hour laboratory period, credit, 3.
Professor Thayer and Mr. Ross.

51. I. Greenhouse Management. — For juniors; seniors may elect. This course is intended to familiarize students with the methods and principles involved in the management of greenhouses and greenhouse crops; history and development of the floricultural industry; preparation of soils; fertilizers; potting; watering; ventilation; control of insects and diseases; methods of plant propagation; forcing of plants. At some time during the semester the members of the class will be required to take a one-day trip to visit large commercial establishments at an approximate expense of five dollars. Lectures, assigned readings, reports, and laboratory practice.
2 class hours. 1 2-hour laboratory period, credit, 3.
Professor Thayer.

52. II. Floral Arrangement. — For juniors; seniors may elect. A study of the principles involving the arrangement and use of cut flowers and plants; funeral designs, basket and vase arrangements, table decorations, home, church, and other interior decorations. A study of color and color harmony as applied to such work. Lectures, assigned readings, reports and laboratory practice. This course is limited to ten students, preference being given to major students in Floriculture and Landscape Architecture.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Professor Thayer.

54. II. Greenhouse Construction and Heating. — For juniors; seniors may elect. The location, types, arrangement, construction, cost, equipment, heating, and ventilation of greenhouse structures; the drawing of plans and study of specifications. Special emphasis laid on heating problems. Lectures, assigned readings, and problems.
2 class hours. 1 2-hour laboratory period, credit, 3.
Professor Thayer.

58. II. Amateur Floriculture. — This course is intended primarily for major students in the Division of Home Economics and for other women students. Three phases of floriculture will be considered: (1) the arrangement and use of cut flowers for decorative purposes in the home and elsewhere, (2) house plants, methods of propagation, (3) garden flowers and their uses on the home grounds.
2 class hours. 1 2-hour laboratory period, credit 3.
Professor Thayer and Mr. Ross.

75. I. 76. II. Commercial Floriculture. — For seniors. A detailed study of the cultural methods for the important commercial cut-flower crops and potted

plants. The marketing of flowers and plants, including the management of wholesale markets and retail stores, a study of systems of record keeping, cost analysis, inventory methods, and other phases of this important part of the floricultural industry. Trips may be taken to nearby commercial establishments. The lectures are supplemented with textbooks, assigned readings and problems.
2 class hours. 1 2-hour laboratory period, credit, 3.
Assistant Professor Hubbard.

Prerequisite, Floriculture 51.

79. I. Conservatory Plants (1936–37). — Alternates with Course 81 for students specializing in floriculture. For juniors and seniors. A study of the foliage and flowering plants used in conservatory work; methods of propagation; assigned readings, reports, and identification of materials.
1 class hour. 1 2-hour laboratory period, credit, 2.
Professor Thayer.

81. I. Herbaceous Gardens and Borders. — Alternates with Course 79 for students specializing in floriculture; given annually for students specializing in landscape architecture. For juniors and seniors. This course is a continuation of Course 26 with emphasis on the uses of herbaceous materials in various types of plantings. Lectures, assigned readings, planning of borders and gardens.
1 class hour. 1 4-hour laboratory period, credit, 3.
Assistant Professor Hubbard.

Prerequisite, Floriculture 26.

82. II. Seminar. — For seniors specializing in floriculture. Presentation and discussion of research work in floriculture and other related fields, reports on assignments by individual members of the class, and the preparation of a thesis dealing with an assigned subject. Seminars are conducted weekly.
1 class hour. 4 laboratory hours, credit, 3.
Professor Thayer.

Forestry.

Professor Holdsworth, Professor Trippensee, Assistant Professor Rich, Mr. Curtis.

The courses in forestry are designed for students who desire a knowledge of the management, regulation and improvement of woodlands of moderate area. They are further intended to develop the place of forest cultivation in land utilization and to be explanatory of the general field of forestry for those who plan to become students in graduate schools of forestry.

The courses in Wildlife Management are designed for students who desire a knowledge of the basic principles of wildlife conservation. Wildlife is a natural resource that is economically conservable and is subject to increase and regulation through scientific management and proper land use. These courses are open to students who have acquired a suitable background of the sciences basic to wildlife management. Before scheduling these courses the student should consult the Professor of Wildlife Management.

Elective Courses.

55. I. The Management, Protection and Use of Woodlands. — For juniors and seniors. Methods of determining the volume and value of the forest growing stock; the determination of growth and yield; the principles of forest regulation and sustained yield; forest protection; forest development and maintenance. The course is presented with especial emphasis on the application of the principles of forestry to New England conditions. Problems in applied forestry are carried out on the Mount Toby Demonstration Forest. Text and assigned readings.
1 class hour. 1 4-hour laboratory and field period, credit, 3.
Professor Holdsworth.

56. II. The Principles of Silviculture and Wood Production. — For juniors and seniors. The nature of a forest; factors influencing and controlling the growth and development of forest trees and stands; forest effects on site conditions; methods of forest reproduction through silvicultural practice; inter-

mediate cuttings; choice of species for forest use; supplementary seeding and planting; forest sanitation and its relation to silviculture; the products of the forest. The field work in applied forestry is conducted principally on the Mount Toby Demonstration Forest. Visits of inspection are made to certain accessible forests which have been under scientific management for many years.

1 class hour. 1 4-hour laboratory and field period, credit, 3.

Professor HOLDSWORTH.

58. **II.** FOREST ECONOMICS AND POLICY. — For juniors and seniors. The growth and development of forestry from an historic viewpoint; the forest as a natural resource and its place in our economic life; our past and present forest resources; Federal and State forest organization; private forestry; the development of a National Forest Policy. Text, assigned readings. A semester paper, the subject to be selected by the student after conference with the instructor, will be required.

3 class hours. Credit, 3.

Professor HOLDSWORTH.

65. **I.** PRINCIPLES OF WILDLIFE CONSERVATION. — For juniors. This is designed as an orientation course for any student in the College who wishes to get a broad view of the subject. It will cover a general review of the history of the administration of wild life resources as well as an introduction to the various biological and economic and legal problems involved in the handling of wildlife. The course will consist of lectures, reports, and discussions. A semester paper on some present wildlife problem will be required.

2 class hours. Credit, 2.

Professor TRIPPENSEE.

66. **II.** INTRODUCTION TO WILDLIFE MANAGEMENT. — For juniors. This course is designed for students interested in the profession of forestry and wildlife management. It will deal with the vertebrate fauna of the forest in relation to its life requirements, characteristics, and ecological relationships. The course will also deal with problems involved with the production and utilization of forest animal resources in connection with the administration of the forest.

1 class hour. 1 4-hour laboratory period, credit, 3.

Professor TRIPPENSEE.

75. **I.** FOREST UTILIZATION. — For seniors. Multiple use of forest areas as timber production, wildlife, recreation, watershed protection, aesthetic values, and indirect human benefits. Principles underlying the manufacture, merchandising and distribution of forest products.

3 class hours. Credit, 3.

Assistant Professor RICH.

Horticultural Manufactures.

Professor CHENOWETH, Mr. MACLINN.

The courses in Horticultural Manufactures (Food Technology) have been planned to give the student (1) training in food preservation sufficient to meet the needs of a general education, and (2) training for technical work in the food industries including business, research, and teaching.

Students who desire the elementary training only as given in (1) above will restrict their work to the first year courses and they will not be required to offer prerequisites other than the required general courses in the sciences. Students who desire to make Horticultural Manufactures their major or specialized subject will be expected to take the full two years' work as outlined, and should consult with the department as to required courses in chemistry and bacteriology.

Elective Courses.

51. **I.** FRUIT AND VEGETABLE PRODUCTS. — For juniors; seniors may elect. This course together with Course 52 gives the student a general elementary knowledge of the science and practice of food preservation. Principles and theories of the various methods of food manufacture are the basis for classroom exercises.

The laboratory work during the first semester deals largely with the preservation of the autumn fruits and vegetables, small fruit products, freezing, and dehydration.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Professor CHENOWETH.

52. **II.** MISCELLANEOUS PRODUCTS. — For juniors; seniors may elect. This is a continuation of Course 51. The laboratory work includes pickles and pickle products, maple products, citrus products, fruit syrups, soups, condiments, and the canning of meats, poultry, and the spring vegetables.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Professor CHENOWETH.

Prerequisite, Horticultural Manufactures 51.

61. **I.** COMMERCIAL PRACTICES. — For seniors who specialize in horticultural manufactures. A survey of commercial practices in the manufacture and preservation of food products. This will involve a study of equipment, factory arrangement, sanitation, and government regulations, the operation of types of commercial equipment in quantity production.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Mr. MACLINN.

Prerequisites, Horticultural Manufactures 51 and 52.

62. **II.** FOOD PRESERVATION PROBLEMS. — For seniors who specialize in horticultural manufactures. This is a continuation of Course 61. The class exercises will deal largely with a survey study of the sources of raw materials, commercial methods of manufacture, packing and distribution of the more common foods, also a study of the more important contributions of research. Laboratory work will include the formation of research projects, interpretation of research data. The use of preservatives, the simple analysis of foods and the commercial practices as applied to preservation of such materials as are available: fish, meats, poultry, and spring vegetables.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Mr. MACLINN.

Prerequisite, Horticultural Manufactures 61.

71. **I.** 72. **II.** SEMINAR. — For seniors who specialize in horticultural manufactures. Two seminar sessions are held each week.
2 class hours. Credit, 2.
The DEPARTMENT.

75. **I.** FOOD PRESERVATION. — For seniors and graduate students. Not open to students who have credit for Horticultural Manufactures 51, 52, or 81. This is a general course in food preservation and intended only for those who desire a broad general knowledge of the subject because of its cultural or practical value.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Mr. MACLINN.

81. **I.** HOME FOOD PRESERVATION. — For junior women; seniors and graduate students may elect. This course covers the general field of food preservation as applied to the home. A textbook is used as a basis for classroom exercises. Laboratory work deals with the canning of fruits, vegetables, meats and poultry; the manufacture of food products including jams, jellies, conserves, marmalades, pickles, fruit butters, etc. The emphasis in both class and laboratory is placed on scientific, economical practices for home food preservation.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Professor CHENOWETH.

82. **II.** SPECIAL PRODUCTS. — For seniors and graduate students. The materials offered in this course are as follows: the home manufacture of fruit preserves, candied and glacéd fruits, fruit pastes, confections, candies, and other specialties. Approximately one-half the semester is devoted to elementary work in candy making.
2 2-hour laboratory periods, credit, 2.
Professor CHENOWETH and Mr. MACLINN.

Landscape Architecture.

Professor Waugh, Professor Harrison, Professor Blundell, Mr. Robertson, Mr. Monosmith.

The instruction in this department is aimed at two objectives: first, the contribution to general education; second, the preparation of men for the professional practice of landscape architecture. The former objective seems important from the fact that landscape architecture offers an excellent opportunity for the practical discussion of the principles underlying all the fine arts. In the professional courses students are prepared, as well as time permits, to begin work in landscape architecture which leads through field experience or post-graduate study to permanent establishment in that profession.

Drawing.

Elective Courses.

25. **I.** Free-Hand Drawing. — For sophomores; juniors and seniors may elect. Lettering; free-hand perspective; sketching from models; laying flat and graded washes in water colors; water-color rendering.

3 2-hour laboratory periods, credit, 3.
Mr. Robertson.

26. **II.** Mechanical Drawing. — For sophomores; juniors and seniors may elect. Inking exercises; geometric problems; isometric projection; intersections; shades and shadows; parallel, angular, and oblique perspectives; perspective drawings of buildings. Students should have preparation in plane and solid geometry.

3 2-hour laboratory periods, credit, 3.
Mr. Robertson.

31. **I.** Elementary Design. — For sophomore women. Elementary principles of design, with applications to costume design, interior decoration, etc.

3 2-hour laboratory periods, credit, 3.
Mr. Robertson.

Landscape Architecture.

Elective Courses.

51. **I.** Topography and Mapping. — For juniors. Reconnaissance, location, topography, and mapping, covering the special data needed and the methods used in landscape architecture. Must be followed by Course 52.

3 2-hour laboratory periods, credit, 3.
Professor Harrison.

Prerequisites, Drawing 25 and 26.

52. **II.** Elements of Landscape Architecture. — For juniors. Engineering details; drive design, grade design, drainage, play areas, etc. Study of selected designs, examination of completed works, and, when possible, those under construction; field notes or written reports.

3 2-hour laboratory periods, credit, 3.
Professor Harrison.

Prerequisites, Landscape Architecture 51 and either Horticulture 51 or advanced Mathematics.

54. **II.** Garden Design. — For juniors. Fundamental principles of design with application to simple problems in the design of gardens and small home grounds.

3 2-hour laboratory periods, credit, 3.
Professor Waugh.

Prerequisites, Landscape Architecture 51 and concurrently 52.

75. **I.** Theory of Landscape Art. — For seniors and graduates. The general theory and application of landscape study, including an examination of the principles underlying all the fine arts with special reference to art appreciation.
3 class hours. Credit, 3.
Professor Waugh.

76. **II.** Civic Art. — For seniors. The principles and applications of modern civic art, including land subdivision, city planning, city improvement, rural improvement, and regional planning.

3 2-hour laboratory periods, credit, 3.

Prerequisites, Landscape Architecture 51, 52.

78. **II.** History of Art. — For juniors and seniors. An historical, appreciative survey of art from earliest times to the present, with special reference to the relations of the fine arts to the problems of daily life.

3 class hours. Credit, 3.

Mr. Robertson.

79. **I.** Construction and Maintenance (1937–38). — Alternates with Course 83. For juniors and seniors. Detailed instruction in staking out work; methods of construction and planting; organization, reporting, accounting, estimating, etc.

3 class hours. Credit, 3.

Professor Harrison.

80. **II.** Literature of Landscape Architecture. — For seniors only. The literature of landscape architecture, gardening, plants, forestry and nature appreciation. Requires extensive readings, oral and written reports and the preparation of assigned theses and bibliographies.

1 lecture hour, 1 conference period. Credit, 2.

Professor Waugh.

81. **I.** Advanced Design. — For seniors. Grading and planting plans; garden design and planting.

3 2-hour laboratory periods, credit, 3.

Professor Waugh.

Prerequisites, Landscape Architecture 51, 52, and 54.

82. **II.** Advanced Design. — For seniors. A series of problems in the design of estates, parks, and small properties.

3 2-hour laboratory periods, credit, 3.

Professor Harrison.

Prerequisite, Landscape Architecture 81.

83. **I.** Architecture (1936–37). Alternates with Course 79. For juniors and seniors. The history of architectural development, the different historic types, with special reference to the underlying principles of construction and their relation to landscape design. Illustrated lectures, field trips, the study of details, preparation of plates.

3 class hours. Credit, 3.

Professor Harrison.

84. **II.** Sketching. — For juniors and seniors. The use and development of technique in water color, pencil, pen and ink sketching of outdoor and indoor scenes.

2 2-hour laboratory periods, credit, 2.

Mr. Robertson.

Horticulture.

Elective Courses.

1. **I.** Plant Propagation. — For freshmen. This course serves as an introduction to the field of horticulture, emphasizing the methods and underlying principles involved in the propagation of horticultural plants.

2 class hours. 1 2-hour laboratory period, credit, 3.

Mr. Monosmith.

26. **II.** Plant Materials. — For sophomores. Detailed study of deciduous and evergreen trees, with special reference to the form and character of mature trees, means of identification, natural associations, and uses of the various types of trees in landscape work.

1 class hour. 2 2-hour laboratory periods, credit, 3.

Professor Blundell.

51. I. Plant Materials. — For juniors; seniors may elect. Detailed study of shrubs and woody vines, and their identification, with especial emphasis given to their adaptability to the various landscape uses, methods of handling, and care.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Professor Blundell.

Prerequisite, Horticulture 26.

Olericulture.

Professor Snyder, Mr. Tuttle, Mr. Lachman.

The object of the courses in olericulture is to train men (1) for the commercial branches of vegetable production and marketing, and (2) for the professional fields of research, extension work, and teaching.

Elective Courses.

25. I. General Olericulture. — For sophomores; juniors and seniors may elect. A study of the factors affecting plant growth which are essential to a thorough understanding of vegetable plants and their culture, or for vocational teaching, or professional work other than teaching.
2 class hours. 1 2-hour laboratory period, credit, 3.
Professor Snyder.

51. I. Olericulture. — For juniors; seniors may elect. A study of the principles underlying vegetable production; the vegetable plant, soil and its treatment, plant nutrition, seed, and seedage.
2 class hours. 1 2-hour laboratory period, credit, 3.
Professor Snyder.

52. II. Olericulture. — For juniors; seniors may elect. A study of the principles underlying vegetable production; the vegetable plant and its responses to environmental conditions; methods of culture, marketing, storage, and pest control.
2 class hours. 1 2-hour laboratory period, credit, 3.
Professor Snyder.

75. I. Systematic Olericulture. — For seniors. A critical study of variety identification; nomenclature and classification; variety improvement and seed sources; judging and exhibiting.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Professor Snyder.

76. II. Greenhouse Crops and Plant Growing. — For seniors. A study of the culture of vegetable plants under glass: in the greenhouse, plant house, hotbed, and cold frame; the growing of seedling plants both under glass and in the open for local, retail, or wholesale business.
2 class hours. 1 2-hour laboratory period, credit, 3.
Professor Snyder.

78. II. Commercial Olericulture. — For seniors. A study of the problems in the commercial production of vegetables: general culture, fertilizers and manures, machinery, labor, handling, and marketing. One or more trips to important market or truck growing sections are required. Twenty-five dollars will cover the cost of such trips.
2 class hours. 1 2-hour laboratory period, credit, 3.
Professor Snyder.

Prerequisite, Olericulture 25 or 51 or 52.

Pomology.

Professor Van Meter, Professor French, Assistant Professor Roberts.

The pomology courses offer a comprehensive training in the scientific and commercial principles concerned in the growing and marketing of apples, pears, peaches, plums, cherries, and small fruits. Major fields open to graduates include: (1) practical work in connection with the operation of a fruit farm; (2) teaching in college, high school or secondary schools of agriculture; (3) extension work in

county, state, or nation; (4) research work with state or federal connections; and (5) commercial work in connection with the manufacture and sale of such supplies as machinery, packages, and spraying and dusting materials. Supporting courses in science are required. Since these vary with the objective of the student, that objective should be determined as early as possible.

Elective Courses.

26. **II.** Small Fruits. — For sophomores; juniors and seniors may elect. A study of the growing of blackberries, strawberries, currants, blueberries, and grapes, dealing with such questions as varieties, selecting a site for the plantation, soils, fertilizers, pruning, harvesting, and marketing.
2 class hours. 1 2-hour laboratory period, credit, 3.
Professor French.

53. **I.** General Pomology. — For juniors; seniors may elect. A study of the most improved practices in fruit production, including such questions as the selection of orchard sites and soils, laying out and setting the orchard, the structure and growth of fruit plants; the bearing habits, pruning and training of fruits; fertilizers, pollination, and winter injury.
2 class hours. 1 2-hour laboratory period, credit, 3.
Assistant Professor Roberts.

56. **II.** Spraying. — For juniors; seniors may elect. A detailed study of: (*a*) Spraying materials, their composition, manufacture, and preparation for use; the desirable and objectionable qualities of each material; formulas used, costs, and tests of purity. (*b*) Spraying machinery, including principal types of pumps, nozzles, hose, and vehicles; their structure and care. (*c*) Orchard methods in the application of various materials used, with the important considerations for spraying each fruit and for combating each orchard pest. This course is designed especially to familiarize the student with practical details of actual work in the orchard.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Assistant Professor Roberts.

75. **I.** Systematic Pomology (1936–37). — For juniors and seniors. A study of the more important kinds and varieties of fruits grown in the United States, their relationships and nomenclature. Particular emphasis is placed upon the identification, classification, and value of varieties including a study of the characters of the plant as well as the fruit. Given in alternate years.
1 class hour. 3 2-hour laboratory periods, credit, 4.
Professor French.

77. **I.** Commercial Pomology (1937–38). — For juniors and seniors. A critical consideration of the picking, handling, storing, and marketing of fruits, including a discussion of storage houses, fruit packages, methods of refrigeration, grading, and packing. This course also considers the leading American and foreign centers of fruit production as they affect our own fruit industry through competition here or abroad. Given in alternate years.
2 class hours. 1 2-hour laboratory period, credit, 3.
Assistant Professor Roberts.

81. **I.** 82. **II.** Advanced Pomology. — For seniors. A consideration of the scientific principles governing the growth and behavior of fruit-bearing plants. Special attention is given to a critical survey of the more important research work in the field of pomology.
2 class hours. 1 2-hour laboratory period, credit, 3.
Professor Van Meter.

Prerequisite, Pomology 53.

83. **I.** 84. **II.** Seminar. — For seniors. Advanced study of problems relating to fruit production. Each student is assigned problems which must be reported to the seminar for discussion.
1 class hour. Credit, 1.
The Department.

Plant Breeding.

Elective Courses.

51. **I.** Plant Genetics. — For juniors and seniors. A study of the principles of inheritance as applied to plants, together with a consideration of the methods used and problems involved in the improvement of horticultural crops.
3 class hours. Credit, 3.
Professor French.

52. **II.** Advanced Plant Breeding. — For juniors and seniors. An advanced study of experimental methods, Mendelian analysis, fluctuating variations, mutations, sterility, disease resistance, etc. Laboratory work in the experimental breeding of plants.
2 class hours. 1 2-hour laboratory period, credit, 3.
Professor French.

Prerequisite, Plant Breeding, 51.

81. **I.** 82. **II.** Special Problems in Plant Breeding. — For seniors. Qualified seniors may carry on advanced study on special topics or undertake such original investigation as time and available material will permit.
Credit, 2.
Professor French.

Prerequisite, Plant Breeding 52.

DIVISION OF PHYSICAL AND BIOLOGICAL SCIENCES.

Professor Gordon.

Bacteriology and Physiology.

Professor Gage, Professor Bradley, Assistant Professor Garvey, Dr. Rakieten.

The courses in bacteriology and physiology have been planned to furnish: (1) general training in these subjects for all college students, (2) training for those interested in agriculture, industries, and domestic science, (3) training for prospective students of human or veterinary medicine and public health, (4) training for teachers and laboratory workers in the biological sciences. The courses in bacteriology include introductory and general courses, and advanced work, most of which precedes the applied bacteriology of agriculture, the arts, industry, domestic science, and public health. The course in physiology includes considerations of modern ideas on this subject in relation to human welfare.

Bacteriology.

Elective Courses.

31. **I.** Introductory and General Bacteriology.—For sophomores who are not majoring in the physical and biological sciences; juniors and seniors may elect. Designed to make micro-organisms real and significant. The laboratory covers the use and proper care of the compound microscope, the preparation of culture media, methods of sterilizing equipment, the isolation and handling of pure cultures, simple and differential staining, studies on classification and cultural and biochemical studies on type species of pathogenic and nonpathogenic bacteria. Individual practice in the isolation and identification of bacterial forms is a required part of the laboratory assignment. The course aims to provide a basis for bacteriological study and interpretation and to furnish such material as will be valuable in understanding agriculture, domestic science, and public health problems.
2 3-hour laboratory periods, credit, 3.
Professor Bradley and Assistant Professor Garvey.

52. **II.** Advanced Bacteriology. — For juniors; seniors may elect. A continuation of Course 31. The identification and differentiation of bacterial species by morphological, cultural, physiological, and serological studies. The combined courses give to the student not only a comprehensive picture of various forms of existing bacteria but develop a specialized technique for their cultivation, isolation, and identification.
2 3-hour laboratory periods, credit, 3.
Professor Bradley and Assistant Professor Garvey.

Prerequisite, Bacteriology 31.

61. I. Bacteriology. (Public Health.) — For juniors; seniors may elect. Considers the relation of the human body to its environment in the maintenance of health and the production of disease. The administration and organization of community health, the prevention or control of animal or human diseases of public health significance are considered. A study of special community health problems and the relationship of these problems to social welfare is discussed.
2 class hours. Credit, 2.
Professor Bradley.

62. II. Bacteriology. (Public Health.) — For juniors; seniors may elect. Sanitation and its relation to agriculture, industry, and public health. The microbiological features of air, water, soil, sewage, and refuse; industrial hygiene and the control of municipal and rural sanitary projects are considered.
2 class hours. Credit, 2.
Professor Bradley.

Prerequisite, Bacteriology 31 or 61.

81. I. 82. II. Applied Bacteriology. — For seniors; juniors may elect. These two courses covering a full year's work are designed to give the student a working knowledge of present-day applied bacteriology. The work in the laboratory is presented in three distinct sections: (1) soil, (2) food, (3) dairy. In soil, such subjects as the number and development of micro-organisms in different soils, factors influencing their growth and activity and changes wrought upon matter in the production of soil fertility, ammonification, nitrification, etc., receive attention. In food, a study of preservation, fermentation, spoilage and methods of sanitary examination are considered. In dairy, emphasis is placed upon modern methods for examining the sanitary quality of milk and milk products. Groups of bacteria normally present, abnormal and normal fermentations, effect of temperature and the rôle of milk in the transmission of disease are some of the subjects receiving special consideration.
2 3-hour laboratory periods, credit, 3.
Professor Bradley or Assistant Professor Garvey.

Prerequisite, Bacteriology 52.

85. I. Bacteriology. (Serology.) — For seniors. This course aims to supplement Course 52 and is planned to complete work essential for the advanced study in bacteriology and physiological science. This course includes the study, preparation and standardization of such biological products as antigens, agglutinins, precipitins, hemolysins, and complement-fixation bodies, and the use of the same in differential bacteriology and disease diagnoses. Consideration is also given to isohemagglutinins and their relation to human blood groups. Class limited to ten students.
2 3-hour laboratory periods, credit, 3.
Professor Gage and Dr. Rakieten.

Prerequisite, Bacteriology 52.

Physiology.

Elective Courses.

32. II. Physiology. — For sophomores. This course presents the subject of physiology from the standpoint of its definition and modern scope. The laboratory demonstrations and practice are planned to meet best the requirements of a preliminary course in physiology. Basic anatomical knowledge essential to physiological interpretations will be considered. Exercises on neuromuscular physiology, blood, the circulatory system, and alimentation are included. This course is suited to the needs of students who elect only one course in physiology.
2 class hours. 1 2-hour laboratory period, credit, 3.
Professor Gage and Dr. Rakieten.

75. I. Physiology. — For seniors; juniors may elect. The object of this course is to establish a broad basis for physiological study. The study and use of instruments is emphasized. The correlation of physics, chemistry, and biological science to the interpretation of functional activities is particularly con-

sidered. Aspects of nerve muscle physiology, hemodynamics, alimentation, intermediate metabolism, and the general plan and structure of the body pertaining to each division of the work will be considered.
2 class hours. 1 2-hour laboratory period, credit, 3.
Professor Gage and Dr. Rakieten.

76. II. Physiology. — For seniors; juniors may elect. Physiology of internal and external respiration including studies on calorimetry and basal metabolism. This will be followed by work on the physiology of excretions. An introduction to the physiology of the special senses will be presented. This course is especially planned for students with a broad training in biological subjects.
2 class hours. 1 2-hour laboratory period, credit, 3.
Professor Gage and Dr. Rakieten.

Prerequisite, Physiology 75.

Botany.

Professor Osmun, Associate Professor Clark, Associate Professor Torrey, Assistant Professor Davis, Mr. Hodge.

The courses in botany are of three types: (1) those which present the principles of plant life both for their fundamental importance in this and other branches and for their general educational value; (2) those which have for their chief aim direct support of technical courses in agriculture and horticulture; (3) those providing broad, intensive training leading to specialization in the science. Courses in the last group also offer helpful training for students specializing in other sciences and in scientific agriculture.

Required Course.

1. I and II. Introductory Botany. — For freshmen. Through laboratory, textbook, and lantern slides an attempt is made to set forth a body of facts dealing with the morphology and physiology of plants which may serve not only as a foundation for future professional work in biological science, but may be of intrinsic value to the educated layman. The topics of seed germination, ecological adaptations, floral structures, taxonomy, botanical history, cytology, wood-anatomy, plant physiology and plant reproduction, receive appropriate elementary treatment. The lectures attempt to interpret the facts of plant structure and function in the light of the major biological principles.
2 class hours. 2 2-hour laboratory periods, credit, 4.
Associate Professor Torrey and Mr. Hodge.

Elective Courses.

25. I. Cryptogamic Botany. — For sophomores; juniors and seniors may elect. Selected forms typifying the slime-molds, bacteria, algæ, fungi, lichens, liverworts, mosses and fernworts. The course has a two-fold purpose: (1) it is intended for students who desire to extend their knowledge to the principal branches of the plant kingdom, thus rounding out a general course of which Course 2 constitutes the first part; (2) it is also planned as an introduction to certain advanced courses for which it is prerequisite.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Professor Osmun.

Prerequisite, Botany 1.

51. I. Diseases of Vegetables. — For juniors and seniors. Study of the principal diseases of vegetables occurring in field and greenhouse, with especial attention to those important in Massachusetts, and consideration of combative measures. This course is planned and conducted primarily for students interested in vegetable gardening, but those intending to enter any branch of plant industry should find it of interest. Students who desire to extend their knowledge of plant diseases over a wider range of crops may do so by taking, in addition to this, any or all of Courses 52, 53, and 54.
1 class hour. 1 2-hour laboratory period, credit, 2.
Assistant Professor Davis.

Prerequisite, Botany 1.

52. II. Diseases of Fruits. — For juniors and seniors. The plan of this course is similar to that of Course 51, but it is intended primarily for students interested in pomology.
1 class hour. 1 2-hour laboratory period, credit, 2.
Assistant Professor Davis.
Prerequisite, Botany 1.

53. I. Diseases of Field Crops. — For juniors and seniors. The plan of this course is similar to that of Course 51, but it is intended primarily for students interested in field crops.
1 class hour. 1 2-hour laboratory period, credit, 2.
Assistant Professor Davis.
Prerequisite, Botany 1.

54. II. Diseases of Floricultural Crops, Ornamentals, Shrubs, and Trees. — For juniors and seniors. The plan of this course is similar to that of Course 51, but it is intended primarily for students interested in floriculture, nursery practice, and forestry.
1 class hour. 1 2-hour laboratory period, credit, 2.
Assistant Professor Davis.
Prerequisite, Botany 1.

56. II. Diseases of Crops. — For juniors and seniors. This is a general course in which representative diseases of the principal crops grown in Massachusetts are studied. The plan of the course is otherwise similar to that of Course 51. It is intended for students majoring in entomology and others who desire a brief, general course of this nature.
1 class hour. 1 2-hour laboratory period, credit, 2.
Assistant Professor Davis.
Prerequisite, Botany 1.

58. II. Microtechnique. — For juniors and seniors. A course in the preparation of microscopic mounts including the celloidin and paraffin methods and involving the use or microtomes and of differential stains.
2 2-hour laboratory periods, credit, 2.
Prerequisite, Botany 25. Associate Professor Torrey.

59. I. 60. II. Systematic Botany of the Higher Plants (1936–37). — Alternate with Courses 61 and 62. For juniors and seniors. An intensive study of gymnosperms and angiosperms. Lectures deal with the interrelations of the flowering plants and with their ecology, geography, and economic importance. Laboratory work consists of a study of types from the most important natural plant families. Particular emphasis is laid on the flora of Massachusetts. The department herbarium and greenhouses supply material of important tropical forms for study.
2 class hours. 1 2-hour laboratory period, credit, 3.
Associate Professor Torrey.
Prerequisite, Botany 1.

61. I. 62. II. The Comparative Anatomy of Green Plants (1937–38.) — Alternate with Courses 59 and 60. For juniors and seniors. In the lectures an intensive study is directed to the comparative anatomy of green plants from the evolutionary standpoint. Particular emphasis is laid upon the woody forms both living and extinct. Of the latter, the department is fortunate in possessing excellent sets of micro-preparations and lantern slides.
2 class hours. 1 2-hour laboratory period, credit, 3.
Associate Professor Torrey.
Prerequisite, Botany 25.

63. I. 64. II. Systematic Mycology. — For juniors; seniors may elect. Morphology and development of typical species representing the orders and families of fungi; practice in identification, collection and preservation of fungi; systems of classification; collateral reading.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Assistant Professor Davis.
Prerequisite, Botany 25.

75. I. 76. II. Plant Pathology. — For seniors. Comprehensive study of diseases of plants; training in laboratory methods and technique, including culture work and artificial inoculation of hosts; miscellaneous diagnosis; study of literature and representative life histories of pathogens. Prepares for civil service, experiment station, and college work.
1 class hour. 4 2-hour laboratory periods, credit, 5.
Prerequisite, Botany 25. Professors Osmun and Davis.

77. I. 78. II. Plant Physiology. — For seniors; juniors may elect. Study of the factors and conditions of (*a*) plant nutrition, including the taking up of water and mineral substances, the assimilation of carbon and nitrogen, and the release of energy due to the processes of dissimilation; (*b*) plant growth, including the influence of internal and external factors on growth, the development of reproductive and vegetative organs; (*c*) plant movements, including those due to the taking up of water, and those of both motile and fixed forms in response to external stimuli. Weekly conferences are held, at which students report on assignments to original sources in the literature.
2 class hours. 3 2-hour laboratory periods, credit 5.
Prerequisites, Botany 25; Chemistry 51. Associate Professor Clark.

80. II. Plant Physiology. — For seniors; juniors may elect. A briefer course than Course 77 and 78, designed especially for students in horticulture, agronomy, and floriculture, and aiming to give the underlying principles of plant physiology which will supply the scientific basis for the manifold practices in the various fields of plant culture.
2 class hours. 2 2-hour laboratory periods, credit, 4.
Prerequisite, Botany 1; Chemistry 30. Associate Professor Clark.

81. I. Plant Ecology. — For seniors. Study of plants in relation to their environment, with special emphasis on the newer field studies, which have given increasing insight into the physical and chemical factors as they influence growth and development in the field and the adaptability of plants to changes in their normal environment. The various types of plant formations and successions are studied, as well as the mutual and antagonistic relations of certain plants.
1 class hour. 1 2-hour laboratory period, credit, 2.
Prerequisite, Botany 1. Associate Professor Clark.

84. II. The Ferns (1936–37). — For seniors; juniors may elect. Intensive study of the morphology, life-history, and taxonomy of the fern plants, with especial attention t o the fern flora of New England. Given in alternate years.
1 class hour. 1 2-hour laboratory period, credit, 2.
Prerequisite, Botany 25. Professor Osmun.

Chemistry.

Professor Ritchie, Professor Chamberlain, Professor Peters, Associate Professor Serex, Assistant Professor Fessenden, Dr. Redmon.

In the courses in chemistry, emphasis is laid on both their educational and their vocational value. The courses in the freshman year deal with fundamental principles and give the student such an understanding of the subject as will enable him to appreciate the relation of chemistry to the other sciences and to agriculture and industry. The more advanced courses, including quantitative analysis, organic, physiological, and physical chemistry, are for those who intend to take up graduate study, to become teachers and workers in the allied sciences, or who desire to follow chemistry as a vocation. Those completing the undergraduate courses are fitted for positions in the agricultural industries — fertilizer, feed, and insecticide manufacture — as well as in other lines of industry, and in the State experiment stations, Federal departments, commercial laboratories, and in high school teaching. Postgraduate students are prepared for positions as teachers in colleges, and for more advanced positions in industry and in the experiment stations.

Required Courses.

1. I and II. General Chemistry. — For freshmen who have not had chemistry and who begin the subject in college. It presents an introduction to the

fundamental chemical laws, together with a study of the typical acid- and base-forming elements and their compounds.
2 class hours. 2 2-hour laboratory periods, credit, 4.
Dr. REDMON.

3. **I and II.** GENERAL CHEMISTRY. — For freshmen who have had chemistry in high or preparatory school. A study of the fundamental concepts of chemistry. The laboratory work is the central feature of the course, and is supplemented closely by the lectures. The object of the course is to give the student a scientific training as well as to prepare him for advanced courses.
2 class hours. 2 2-hour laboratory periods, credit, 4.
Assistant Professor FESSENDEN.

Elective Courses.

25. **I.** GENERAL CHEMISTRY. — For sophomores. A continuation of Chemistry 1 and 3. A study of ionic equilibrium, oxidation and reduction, the reactions of the ions of some of the common elements and the divising and testing of methods of separating the ions of a few elements.
2 class hours. 2 2-hour laboratory periods, credit, 4.
Associate Professor SEREX and Assistant Professor FESSENDEN.
Prerequisite, Chemistry 1 or 3.

26. **II.** QUALITATIVE ANALYSIS. — For sophomores. A study of the characteristic properties, reactions and the systematic separation and identification of the common cations and anions.
2 class hours. 2 2-hour laboratory periods, credit, 4.
Associate Professor SEREX.
Prerequisite, Chemistry 25.

31. **I.** 32. **II.** ORGANIC CHEMISTRY. — For sophomores; juniors and seniors may elect. This is a short course in organic chemistry primarily for Home Economics and Agricultural majors, and for such General Science majors as are not premedical. The course covers the first part of the subject-matter given in Chemistry 51 and 52, but in a less comprehensive manner, and deals primarily with that part of organic chemistry having to do with food and nutrition and agricultural products. Students taking this course may elect subsequently only Chemistry 79 and 88.
2 class hours. 1 2-hour laboratory period, credit, 3.
Professor CHAMBERLAIN.
Prerequisite, Chemistry 1 or 3.

51. **I.** 52. **II.** ORGANIC CHEMISTRY. — For juniors; seniors may elect. A systematic study, both from texts and in the laboratory, of the more important compounds in the entire field of organic chemistry. Especial attention is given to those compounds which are found in agricultural products or are manufactured from them. These include alcohols, acids, esters, fats, carbohydrates, and proteins. In the second semester compounds in the benzene series are considered. The work forms a foundation for courses in physiological chemistry and agricultural analysis, and is especially planned for those majoring in chemistry or the other sciences.
3 class hours. 2 2-hour laboratory periods, credit, 5.
Professor CHAMBERLAIN.
Prerequisite Chemistry 25. Chemistry 26 is prerequisite for those majoring in chemistry.

61. **I.** 62. **II.** QUANTITATIVE ANALYSIS. — For juniors; seniors may elect. The course includes gravimetric and volumetric analysis. The gravimetric determination of chlorine, sulfur and iron; volumetric analysis with acids and bases: indicators, hydrogen-ion concentration and pH; analysis of limestone; the use of potassium dichromate, permanganate and iodide as reagents; chemical calculations and problems; water analysis.
1 class hour. 2 4-hour laboratory periods, credit, 5.
Professor PETERS.
Prerequisite, Chemistry 25. Chemistry 26 is prerequisite for those majoring in chemistry.

75. I. Physical Chemistry. — For seniors. A study of the fundamental theories and laws of physical chemistry, together with laboratory work which includes the important methods of physicochemical measurements.
3 class hours. 1 4-hour laboratory period, credit, 5.
Associate Professor Serex.

Prerequisite, Chemistry 61.

79. I. Physiological Chemistry. — For seniors. Supplementary to Courses 51 and 52. For those who expect to take up scientific work in microbiology, botany, agronomy, animal husbandry, etc., and who have had Courses 51 and 52, it gives acquaintance with the chemistry of the physiological processes in plants and animals, by means of which some of the important organic compounds studied in Courses 51 and 52 are built up in the living organism or are used as food by it. In the lectures, the study of food and nutrition as related to both human and domestic animals is the principal subject. In the laboratory, experimental studies are made of both animal and plant materials and processes.
3 class hours. 2 2-hour laboratory periods, credit, 5.

Prerequisite, Organic Chemistry.

86. II. Review of General Chemistry. — For seniors. Primarily for students majoring in chemistry; others may elect by permission of the instructor. A knowledge of physical chemistry is desirable. The review of general chemistry is largely theoretical. Some subjects may be enlarged by special lectures, such as atomic structure, Werner's co-ordination theory, crystal structure as shown by X-rays.
2 class hours. Credit, 2.
Professor Peters.

88. II. History of Chemistry. — For seniors. An historical and biographical study of chemistry and chemists. The aim of the course is: (1) to give the student a comprehensive view of the science as a whole, through a study of the development of new ideas and the establishment of new theories and laws; and (2) to arouse an enthusiastic interest in the subject and an appreciation of the true spirit of scientific research, through a sympathetic presentation of the work and lives of the great chemists who have been the creators of the chemistry of today. The course will consist of lectures, supplemented by systematic correlated reading and the preparation of reports or essays.
2 class hours. Credit, 2

92. II. Introduction Research. — For seniors specializing in chemistry. The aim of the course is to give the student an opportunity to learn the purpose and methods of research. To each student is assigned some special subject or problem in one of the following fields of chemistry, viz., analytical, biochemical, inorganic, organic, physical. A careful study of the literature goes hand in hand with the working out of the problem in the laboratory.
10 laboratory hours, credit, 5.
The Department.

Entomology, Zoölogy, and Geology.

Professor Gordon, Professor Alexander, Professor Crampton, Assistant Professor Sweetman, Assistant Professor Warfel, Assistant Professor Woodside, Dr. Shaw, Miss Morse.

Courses in entomology are for two purposes: (1) The introductory courses aim to give the students a general knowledge of insects, particularly in their relations to man, his crops, his domestic animals, and his health. (2) More advanced courses are intended to train students desiring to specialize in entomology to become United States, State, or experiment station entomologists, teachers, foresters, tree wardens, entomologists connected with insecticide-manufacturing companies, consulting entomologists, or to occupy other positions where an expert knowledge of insects is called for. The beekeeping courses are offered with the following aims: (1) To meet the increase in vocational opportunities for the production of bees or honey as a business. (2) To study the beekeeping needs of fruit and truck-crop industries and the part that bees play in the pollination of flowers. (3) To acquaint the student with a recreational field of many phases, which can be made profitable.

The offerings in zoölogy comprise (1) two introductory courses intended primarily for sophomores, and (2) a number of distinct and somewhat special courses of a more advanced nature.

Entomology.

Elective Courses.

26. **II.** General and Field Entomology. — Primarily for sophomores intending to major in one of the biological sciences; other sophomores, juniors, and seniors may elect. For students who desire some knowledge of insects but cannot give more than one semester to the subject; also an introduction to the later courses for those who intend to follow entomology further. Two lectures throughout the semester are devoted to a brief survey of the entire field of entomology; structure and metamorphosis; the more important methods and materials for control of injurious species; a survey of the more conspicuous and important insects with particular attention to the fauna of New England. A laboratory period will be devoted to the preparation and formation of a collection of insects. Until about April 10th, this work will be done indoors and will consist of lectures and practical work preparatory to the field work after that date. Collections made by the students are studied in later courses.

2 class hours. 1 2-hour laboratory period, credit, 3.
Professor Alexander.

51. **I.** Pests of Special Crops. — For juniors and seniors not specializing in entomology. The laboratory work in this course is largely individual. Students specializing in subjects other than entomology, who desire a more complete knowledge of the insects connected with their major lines of work, can obtain it through this course. Work consisting of a critical study of the important economic insect pests leads to an ability to recognize their different stages, and their work, and to a knowledge of the best methods for their control. Work of this nature is available on the insects attacking field crops, market-garden crops, tree fruits, small fruits, shade trees and shrubs, forest trees, flowers, the domestic animals, household articles, and man.

2 2-hour laboratory periods, credit, 2.
Prerequisite, Entomology 26. Dr. Shaw.

52. **II.** Forest and Shade-tree Insects. — For juniors; seniors may elect. The lecture work deals with the principles and methods of controlling insects which attack forests and forest products, shade trees, etc. The laboratory periods are devoted to a study of the more important species, their identification, biology, and specific control measures. One entire Saturday for a field excursion is required.

1 class hour. 2 2-hour laboratory or field periods, credit, 3.
Professor Alexander.

Prerequisite, Entomology 26; 55 and 57 desirable.

53. **I.** Pests of Special Crops. — For juniors specializing in entomology; seniors may elect. Individual laboratory work on the more important insect pests in this country, together with the preparation and presentation of bulletin material on the same.

2 2-hour laboratory periods, credit, 2.
Prerequisite, Entomology 26. Dr. Shaw.

54. **II.** Medical Entomology. — For juniors. Diseases of man and animals that are transmitted by insects and other arthropods.

1 class hour. 1 2-hour laboratory period, credit, 2.
Professor Crampton.

Prerequisite, Entomology 26.

55. **I.** 56. **II.** Classification of Insects. — For juniors specializing in entomology. Laboratory work on the identification and classification of certain of the major orders of insects.

2 2-hour laboratory periods, credit, 2.
Professor Alexander.

Prerequisite, Entomology 26, accompanying Entomology 57.

57. I. Insect Morphology. — For juniors specializing in entomology, and for a limited number of others having the prerequisite. The lectures treat of the external anatomy of insects, particular stress being given to those parts needed in classification, for use in the parallel Course 55. In the laboratory, the external anatomy of the more important groups is studied, with emphasis on those characters used in the determination of insects.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Prerequisite, Entomology 26. Professor Crampton.

58. II. Coccidology. — For juniors. A study of the scale insects, their structure, habits; technique of mounting; identification, control.
1 class hour. 1 2-hour laboratory period, credit, 2.
Prerequisites, Entomology 26, 55, and 57. Professor Crampton.

75. I. Internal Anatomy of Insects. — For seniors. A study of the organology of insects.
1 class hour. 1 2-hour laboratory period, credit, 2.
Professor Crampton.
Prerequisites, Entomology 26 and 57.

76. II. Advanced Entomology. — For seniors. Two distinct subjects, (1) The immature stages of insects, with particular stress on their structure and recognition; (2) Classification of the minor orders of insects. Taxonomy of all insect groups not earlier considered in Courses 55 and 56.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Professors Crampton and Alexander.
Prerequisites, Entomology 26, 55, 56, and 57.

77. I. Advanced Entomology. — For seniors. Studies of the life history, habits, and methods of control of the important insect pests of the United States; recognition tests of these pests; a study of the literature; methods of bulletin and thesis preparation.
2 2-hour laboratory periods, credit, 2.
Professor Alexander.
Prerequisites, Entomology 26, 52, 53, 54, 55, 57, and 58.

78. II. Insecticides and Their Application. — For seniors; qualified juniors may elect. Composition, preparation, and methods of application of insecticides; other control measures.
2 class hours. Credit, 2.
Assistant Professor Sweetman.
Prerequisites, Entomology 26; Chemistry 51 and 52.

79. I. Insect Ecology and Biological Control. — For seniors. The ecological work considers the relation of the insect to its environment, covering such topics as definitions, present status of the subject, factors of the environment, as temperature, moisture and light; biotic potential; environmental resistance; terrestrial and aquatic insect communities; applied ecology. In the second part of the semester, the problem of biological control is begun, this treating of the types of parasitic organisms, insect parasites; predators; and similar matter.
3 class hours. Credit, 3.
Assistant Professor Sweetman.
Prerequisite, Entomology 26.

80. II. Biological Control and Insectary Practice. — For seniors. A continuation of Course 79. The work on biological control is concluded, discussing problems such as insect diseases; other organisms as parasites of insects; the natural ecological status of insect parasitism and the economic status of parasites. In the laboratory, the students are assigned individual problems which are conducted on a research basis. These problems may deal with any of the following phases: physiology, insecticides, ecology, biological control, or applied entomology.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Assistant Professor Sweetman.
Prerequisite, Entomology 79.

81. I. Insect Physiology. — For seniors. A consideration of the organs of the insect body and their functions, with especial reference to respiration and nutrition; the relationship of physiology to behavior, biochemistry, and biophysics.
2 class hours. Credit, 2.
Prerequisite, Entomology 26. Assistant Professor Sweetman.

87. I. 88. II. Special Problems in Entomology. — For seniors and graduate students. Intended especially for qualified seniors and for graduate students desiring to do special work in some branch of entomology.
Prerequisites, Entomology 26, 55, and 57. Credit, 2 or 3.
The Department.

Apiculture.

Elective Courses.

66. II. Introductory Beekeeping. — For juniors and seniors. In the classroom a study is made of the evolution of the bee, its anatomy and physiology, the races and types of bees, the history of beekeeping, the organization of the colony, and the life of the individual bee. Work in the laboratory and apiary will include a study of the equipment necessary for beekeeping, pollination and pollen-producing plants, nectar-producing plants, and spring management of colonies. Each student will be given an opportunity to observe and handle bees for himself. During the first half of the semester lectures will be substituted for some of the laboratory periods. To be complete, this course should be followed by Course 85.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Dr. Shaw.

85. I. Introductory Beekeeping. — For seniors. A continuation of Course 66. The classroom work consists of lectures and readings in fall management, wintering of colonies, care of the honey crop, the characteristics of honey and wax, and bee diseases. Work in the apiary will include fall management of colonies, wintering, and in the laboratory studies will be made on the physical and chemical characteristics of honey and wax, with some simple biometrical problems.
2 class hours. 1 2-hour laboratory period, credit, 3.
Prerequisite, Entomology 66. Dr. Shaw.

86. II. Problems in Apiculture. — For seniors. Studies are made in important problems connected with beekeeping, such as anatomy and physiology; bee behavior; parasites and diseases of bees; queen-rearing; pollination, and biometry. Students taking this course will be encouraged to carry on individual work in their particular problems.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Prerequisites, Entomology 66 and 85. Dr. Shaw.

Zoölogy

Elective Courses.

25. I. Elements of Zoölogy. — For sophomores; juniors and seniors may elect. This course or its equivalent is prerequisite to all other courses in zoölogy or entomology. It consists of an elementary treatment of the principles of animal biology, and provides a measure of preparation for such subsequent studies as assume some acquaintance with the phenomena of animal life.
2 class hours. 1 2-hour laboratory period, credit, 3.
Professors Gordon, Warfel, Woodside, and Miss Morse.

26. II. Forms of Invertebrate Animals. — For sophomores; juniors and seniors may elect. Required for graduation of students who intend to specialize in entomology, except that a student in entomology may substitute for Zoölogy 26 a year's work in Zoölogy 69 and 70. The course is designed to give a substantial introduction to the more important classes of non-vertebrated animals, and is intended for future students of entomology, zoölogy, and general biology. This course is recommended to students who purpose to take the course in historical geology. See description of Courses 69. I, and 70. II, for those who plan to specialize in zoölogy.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Prerequisite, Zoölogy, 25. Assistant Professor Woodside.

50. II. Elements of Histology and Microscopic Technique.—For juniors; seniors and graduate students may elect. The course comprises (1) an elementary study of animal tissues, (2) a consideration of the principles and methods involved in microtechnique, (3) a series of practical exercises in preparing animal tissues for microscopic examination.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Prerequisite, Zoölogy 25. Miss Morse.

65. I. 66. II. Comparative Vertebrate Zoology. — For juniors, seniors, and graduate students. The work is arranged to run through the year and deals primarily with features of adult anatomy, with only a minimum of embryology (see Courses 75. I, and 76. II). A year's work is recommended for those who wish a broad knowledge of comparative vertebrate zoölogy, and is required of those who specialize in zoölogy. Premedical students will find a full year's work in comparative anatomy most helpful, but may elect only one semester, either 65. I, or 66. II, if the requirements for admission to medical school may thus be satisfied. The laboratory work in Course 65. I, is devoted chiefly to the dissection of the dogfish; that in Course 66. II, to mammalian anatomy. A knowledge of vertebrate zoölogy is very helpful in the study of historical geology.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Prerequisite, Zoölogy 25. Assistant Professor Warfel.

69. I. 70. II. Comparative Invertebrate Zoology. — For juniors, seniors, and graduate students. These courses offer a broad survey of the field of invertebrate zoölogy. Marine, fresh water, terrestrial, and parasitic forms are included, and fossil as well as living types are considered. For those who specialize in zoölogy either 69. I, or 70. II, is required and adapted for those who have had Zoölogy 26; for those who have not had Zoölogy 26 both 69. I, and 70. II, are required. Students who are not specializing in zoölogy, who have had Zoölogy 26, may elect either Course 69. I, or 70. II; for those who have not had Zoölogy 26 and desire the more advanced work in invertebrate zoölogy instead of Course 26, both Courses 69. I and 70. II, are required.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Prerequisite Zoölogy 25. Miss Morse.

75. I. 76. II. Vertebrate Embryology. — For seniors and graduate students; juniors may elect. Students are admitted to these courses only upon consultation with the instructor. The work is arranged to run through the year. Students may take Course 75 without continuing with Course 76, but may not elect Course 76 without having had Course 75 or its equivalent. In general practice a student takes the work in embryology along with or subsequent to the study of comparative vertebrate anatomy. Course 75 in the lectures reviews certain general principles of embryology and the early stages of development of Amphioxus and of the fish, frog, bird, and mammal; and in the laboratory is devoted to the study of embryos, in toto and in sections, of the early stages of the frog and the chick. Course 76 in the lectures reviews the later stages of development of the chick and mammal, with comparisons with the frog, and in the laboratory deals with embryos, in toto and in sections, of the later stages of development of organs and organ systems in the chick and mammal.
1 class hour. 2 2-hour laboratory periods, credit, 3
Prerequisite, Zoölogy 25. Assistant Professor Woodside.

80. II. Ornithology. — For juniors; seniors and others may elect. The orders of birds, based on the American Ornithologists' Union Check-List of North American Birds; ordinal characters of birds; families and family characters of Passerine birds; origin and relationships, adaptative radiation, migrations, distribution, and habits of birds. This course is conducted by means of lectures, practical exercises in the museum, assigned reading, and studies in the field.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Prerequisite, Zoölogy 25. Assistant Professor Warfel.

85. I. Classes of Arthropods other than Insects. — For seniors; juniors may elect. Arthropods are studied from the phylogenetic standpoint, with especial reference to their relationship to the origin and evolution of insects.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Prerequisite, Zoölogy 25. Professor Crampton.

90. **II.** Evolution. — For seniors, juniors may elect. In order to demonstrate the universal scope and operation of the laws of evolution, the course includes a brief sketch of the probable origin and evolution of matter as viewed in the light of modern physical and chemical research; the evolution of the solar system, leading to the formation of the earth; the changes in the earth, preparatory to the production of life; the physical and chemical basis of life; the probable steps in the formation of living matter, and the theories concerning it; the evolution of living things; the developmental history of man, and of the races of mankind; the evolution of human intelligence, languages, culture, institutions, etc., and man's probable future in the light of his past development. Especial consideration is given to the factors of evolution, the basic principles of heredity, variation, and similar topics, with particular reference to their application to human welfare; and the recent contributions in the field of entomology to the advancement of our knowledge of these fundamental principles are briefly reviewed.
2 class hours. Credit, 2.
Professor Crampton.

91. **I.** 92. **II.** Special Problems in Zoology. — For seniors and graduate students. Qualified graduate students and seniors who have met departmental requirements for specialization in the field of zoölogy may arrange for work on a special problem in zoölogy.
Credit, 2 or 3.
Prerequisite, Zoölogy 25. The Department.

Geology.

Elective Courses.

Each of the courses described below is distinct. Course 28 is recommended for those who plan to take only one course in physical geology. It is also desirable as a first course for those who plan to take any of the other courses in geology. Course 52. II, logically precedes the study of petrology, or the science of rocks.

28. **II.** Introductory Geology. — For sophomores; juniors and seniors may elect. This is a general course in physical geology. It deals in an elementary way with the different classes of rocks, and treats more fully of geological agents and processes, and the history of development of land forms.
2 class hours. 1 2-hour laboratory period, credit, 3.
Professor Gordon.

52. **II.** Descriptive and Determinative Mineralogy. — For juniors; seniors and graduate students may elect. This course deals with many of the common or useful minerals and involves the consideration of their composition, crystal forms, occurrence, and economic uses, if any. The laboratory work consists of the study of the physical properties or characters of various minerals as a means of sight recognition, and simple tests, including the blowpipe, for their determination.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Professor Gordon.

61. **I.** Elements of Petrology. — For seniors; juniors and graduate students may elect. The various rock-forming minerals are first reviewed. Then follows a discussion of the different kinds of igneous, sedimentary, and metamorphic rocks, with consideration of their petrographic distinctions, modes of occurrence, and structural features.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Professor Gordon.

62. **II.** Historical Geology. — For seniors; juniors and graduate students may elect. In this course the principal events in the physical history of North America are reviewed in chronological sequence, with a survey of the plant and animal life of the past.
3 class hours. Credit, 3.
Professor Gordon.

Mathematics and Civil Engineering.

Professor Machmer, Associate Professor Moore, Assistant Professor Miller, Mr. Boutelle, Mr. Marston, Mr. Swenson.

The work of the freshman year is required. It is intended to furnish the necessary drill and groundwork needed for many of the scientific and practical courses of other departments. Thoroughness and accuracy are insisted upon. The advanced work in mathematics is taught from a practical standpoint, and many of its applications to other subjects are given. The courses in surveying and civil engineering are given to furnish the groundwork for a professional career. Special emphasis is given to the subjects bearing on highway construction and maintenance.

Required Courses.

1. **I.** Algebra. — For freshmen. A brief review of radicals, quadratic equations, ratio and proportion, variation, and progressions; graphs, binomial theorem, determinants, permutations and combinations, probability, logarithms, compound interest and annuities, and theory of equations. The use of the slide rule is taken up in connection with logarithms.
3 class hours. Credit, 3.
Professors Machmer, Moore, Miller, Mr. Boutelle, Mr. Marston, Mr. Swenson.

2. **II.** Plane Trigonometry and Mathematical Analysis. — For freshmen. The trigonometric functions as lines and ratios, proofs of the principal formulas, transformations, inverse functions, applications to the solution of right and oblique triangles, practical applications, trigonometric equations. This is followed by a brief study of some of the different modes of variation, finding the exact or approximate relations (equations) between the varying quantities, particularly as illustrated by the use of the graph. Also a review of methods of computation, with special emphasis on short processes and the making of close approximations.
3 class hours. Credit, 3.
Professors Machmer, Moore, Miller, Mr. Boutelle, Mr. Marston, Mr. Swenson.

Elective Courses.

26. **II.** Plane Surveying. — For sophomores; juniors and seniors may elect. The elements of land surveying, including the adjustment and use of the usual instruments. Textbook, lectures, and field work.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Associate Professor Moore.

27. **I.** Analytic Geometry. — For sophomores; juniors and seniors may elect. A discussion of the line, circle, conic sections, and various higher plane curves.
3 class hours. Credit, 3.
Professors Machmer, Moore, Miller, Mr. Boutelle, and Mr. Marston.

28. **II.** Differential Calculus. — For sophomores and juniors; seniors may elect. The basic ideas and methods of the differential calculus. The course aims to give the student a realization of the power of the calculus as an instrument of analysis.
3 class hours. Credit, 3.
Associate Professor Moore, Assistant Professor Miller and Mr. Boutelle.
Prerequisite, Mathematics 27.

51 **I.** Integral Calculus. — For juniors; seniors may elect. A continuation of Mathematics 28 into the field of the integral calculus, with special emphasis on applications to problems.
3 class hours. Credit, 3.
Associate Professor Moore and Assistant Professor Miller.
Prerequisite, Mathematics 28.

53. **I.** Applied Mechanics. — For juniors and seniors. The following topics are considered in the study of statics and kinetics; colinear, concurrent, nonconcurrent and parallel force systems in a plane and in space; static friction prob-

lems; first and second moments; rectilinear and curvilinear motions. The free-body method of analysis is emphasized. Algebraic and graphical solutions are determined.

3 class hours. Credit, 3.

Mr. MARSTON.

Prerequisites, Physics 25; Mathematics 28.

54. **II.** HIGHWAYS. — For juniors and seniors. A discussion of the problems arising in modern highway work including development, surveys and plans, drainage and erosion, design, road surfaces, construction and maintenance, and economics. Textbook, lectures, and field problems.

2 class hours. 1 2-hour laboratory period, credit, 3.

Mr. MARSTON.

Prerequisite, Mathematics 26 or permission of the instructor.

55. **I.** MATHEMATICS OF FINANCE. — For juniors, seniors may elect. The mathematical principles of simple and compound interest, annuities, depreciation, valuation of bonds, insurance, building and loan associations. The development and application of aids to computation in problems arising from financial transactions.

3 class hours. Credit, 3.

Assistant Professor MILLER.

Prerequisite, Mathematics 1.

56. **II.** STRENGTH OF MATERIALS. — For juniors and seniors. The following topics are considered: elementary stresses and strains; combined stresses; riveted joints; torsion; shear and bending moments; stresses and deflections in beams; statically indeterminate beams; columns; reinforced concrete beams. The physical properties of materials of construction will be discussed during the class period.

3 class hours. Credit, 3.

Mr. MARSTON.

Prerequisite, Mathematics 53.

60. **II.** SPHERICAL TRIGONOMETRY. — For juniors and seniors. A study of the trigonometry of the sphere with applications to astronomy and navigation.

1 class hour. Credit, 1.

Associate Professor MOORE.

Prerequisite, Mathematics 51.

62. **II.** STATISTICS. — For juniors; seniors may elect. The fundamental mathematical principles of statistical analysis. A discussion of averages, measures of dispersion, frequency and probability functions, correlation, random sampling. This course in conjunction with Agricultural Economics 79 should provide the student with a good understanding of the application of the statistical method and the interpretation of results.

3 class hours. Credit, 3.

Mr. BOUTELLE.

Prerequisite, Mathematics 51.

63. **I.** ENGINEERING DRAWING. — For juniors and seniors. Elements of engineering drawing, lettering projections, interpreting of working drawings, tracings, pictorial representation of machine parts, and engineering problems.

3 2-hour laboratory periods, credit, 3.

Mr. SWENSON.

64. **II.** DESCRIPTIVE GEOMETRY. — For juniors and seniors. Orthographic projection; profile plane; location of points; lines and planes, revolution of points; points on lines; planes and angles; plane, cylindrical, conical, and warped surfaces; surfaces of revolution; intersection of surfaces; tangent lines and planes. Textbook, lectures, and drafting.

2 class hours. 1 2-hour laboratory period, credit, 3.

Mr. SWENSON.

75. **I.** Hydraulics. — For juniors and seniors. Hydrostatics, which deals with pressure gages, pressures on surfaces and immersed and floating bodies, is first considered. Hydrokinectics, which includes flow through orifices and tubes, over weirs and dams, through pipes and open channels, is dealt with next. Hydrodynamics, which considers turbines and pumps, will be taken up briefly. Where possible, current practical problems in hydraulics, such as flood control, hydroelectric power development, and erosion control are discussed during the class period.
2 class hours. 1 2-hour laboratory period, credit, 3.
Mr. Marston.

Prerequisites, Physics 25; Mathematics 28.

76. **II.** Water Supply. — For juniors and seniors. This course considers the engineering aspects of public water supply systems and includes the following topics: quantity of water required; sources of supply; rainfall, evaporation and percolation; flow of streams; ground water; quality of water supplies; waterworks construction; intake works; dams; methods of purification; distribution systems.
3 class hours. Credit, 3.
Mr. Marston.

Prerequisite, Mathematics 75 or permission of the instructor.

91. **I.** 92. **II.** Differential and Empirical Equations. — For seniors. A course dealing with the methods of solution of the simpler forms of differential equations and their applications, and the determination of empirical equations from observed data. Textbook and lectures.
2 class hours. Credit, 2.
Associate Professor Moore.

Prerequisite, Mathematics 51.

Astronomy and Meteorology.

Elective Course.

58. **II.** Descriptive Astronomy and Meteorology. — For juniors and seniors. A brief non-mathematical descriptive course which presents a general survey of the elementary facts and principles of astronomy and meteorology. The chief objective is to make the student alive to the beauty and the order that is revealed in the sky. The course deals with a consideration of the atmosphere through which astronomical phenomena are observed; fundamental conceptions of the celestial sphere, the solar system, stars, constellations, and nebulæ. Two hours of observation and discussion may be substituted for any lecture period.
2 class hours. Credit, 2.
Assistant Professor Lanphear.

Physics.

Professor Powers, Assistant Professor Alderman, Dr. Ross.

The courses in this department present a basic study of the physical laws and phenomena of nature with special emphasis on the applications of the principles studied. These courses furnish satisfactory training for pre-medical students and for prospective teachers in secondary schools. Courses 25 and 26 constitute a study in general physics. The other courses afford opportunity for more advanced and individual work.

Elective Courses.

25. **I.** Mechanics and Heat. — For sophomores; juniors and seniors may elect. This course is largely a study of the following and related topics: equilibrium of bodies; forms of energy and work; motion; fluids; surface tension; molecular phenomena; elasticity; wave-motion; thermometry; expansion; hygrometry; transmission of heat; changes of state; radiation.
2 class hours. 1 2-hour laboratory period, credit, 3.
The Department.

26. II. Light and Electricity. — For sophomores; juniors and seniors may elect. Includes wave-theory of light; optical instruments; analysis of light; interference; polarization; magnetism; electrostatics; production and properties of electric currents; electrical appliances and machines; oscillatory circuits; vacuum tubes, and related topics.
2 class hours. 1 2-hour laboratory period, credit, 3.
The Department.

Prerequisite, Physics 25.

51. I. 52. II. Magnetism, Electricity, Photo-electricity, Thermionics, and Applications. — For juniors and seniors. Course 51 deals largely with direct currents, Course 52 with alternating currents, applications of thermionics, and photo-electricity. These courses are planned to give the student a good training in theory and methods of measurement in the subjects indicated, which are useful in many fields of investigation. Modern methods are stressed and instruments of precision are used.
2 class hours. 1 2-hour laboratory period, credit, 3.
Professor Powers.
Prerequisites, Physics 26 and Mathematics 28 for Course 51; Physics 51 for Course 52.

53. I. Optics. — For juniors; seniors may elect. An intermediate course in the theory of light. Work in geometrical and physical optics is done. Precision instruments are used in the laboratory.
2 class hours. 1 2-hour laboratory period, credit, 3.
Assistant Professor Alderman.
Prerequisite, Physics 26; Mathematics 28.

54. II. Thermodynamics. — For juniors; seniors may elect. A study of heat exchanges and energy changes due to heat in systems of matter. The subject material and experimental methods are useful in other branches of science.
2 class hours. 1 2-hour laboratory period, credit, 3.
Assistant Professor Alderman.
Prerequisite, Physics 25; Mathematics 28.

75. I. 76. II. Advanced Experimental Work in Selected Topics. — For seniors. These courses are largely experimental, and the subject matter is adapted to the needs of the individual student. The research viewpoint is emphasized.
3 2-hour laboratory periods, credit, 3.
Professor Powers.
Prerequisites, Physics 25, 26; 51 and 52; or 53 and 54; Mathematics 28 and 51.

85. I. 86. II. Modern Physics. — For seniors. Typical subjects studied are theories of the atom, radiation, quantum theory, spectra, X-ray analysis, etc.
3 class hours. Credit, 3.
Professor Powers.
Prerequisites, Physics 25, 26, 51, 53, 54, or equivalent; Mathematics 28 and 51.

Veterinary Science.

Professor Lentz.

The courses in veterinary science are arranged to meet the needs of students who expect to follow practical agriculture; of prospective students of veterinary and human medicine, and of teachers and workers in the biological sciences.

Elective Courses.

51. I. Veterinary Hygiene. — For juniors; seniors may elect. Students are acquainted with the influences which air, water, feed, disposal of animal waste material, etc., may have upon the health of animals, and upon the health of those who use both animals and animal products.
3 class hours. Credit, 3.
Professor Lentz.

75. I. Comparative Veterinary Anatomy. — For seniors; juniors may elect. The structure of the horse is studied and the structures of other farm animals are compared with it. This is a lecture and demonstrational course.
3 class hours. Credit, 3.
Professor Lentz.

76. II. General Veterinary Pathology. — For seniors; juniors may elect. A study of fundamental, general pathological conditions; inflammation, fever, etc., and application of principles to etiology, pathogenesis, and prophylaxis of communicable and non-communicable diseases of domesticated animals.
3 class hours. Credit, 3.
Professor Lentz.

88. II. Avian Pathology. — For seniors. Consists of lectures devoted to principles of pathology, with specific application to avian diseases. Etiology, pathogenesis, and prophylaxis will be emphasized.
3 class hours. Credit, 3.
Prerequisites, Bacteriology 31 and 52; Physiology 75 and 76. Professor Lentz.

DIVISION OF SOCIAL SCIENCES.

Professor Mackimmie.*

Economics.

Professor Cance, Assistant Professor Gamble, Mr. Smart, Mr. Larcom.

The aims of the department are two: (1) to give the student an understanding of economic theory and of the application of economics to the organization of Society; (2) to provide students with the elementary training necessary for business vocations.

Required Course.

25. I and II. Elements of Economics. — For sophomores. Definitions and introductory principles of production, exchange, and the financial organization of society, with a short survey of the economics of distribution and the use of wealth and income.
3 class hours. Credit, 3.
The Department.

Elective Courses.

26. II. Elements of Distribution. — For sophomores. A continuation of Course 25 with emphasis on the economics of wages, rent, interest, ownership, and profits. In general, a more detailed study of the theory of wealth distribution and the social forces concerned with valuation and the apportionment of wealth and income arising from economic activity.
3 class hours. Credit, 3.
Mr. Larcom.

Prerequisite, Economics 25.

28. II. Economic Geography. — For sophomores. The purpose of this course is to present to the student, the geographic distribution of natural and human resources, the physiographic bases of the agricultural, manufacturing, and allied industries, their economic characteristics, and the physical and social reasons for their geographic location.
3 class hours. Credit, 3.
Assistant Professor Gamble.

51. I. Economics of Business and Industry. — For juniors; seniors may elect. The application of Economics to business. A presentation of the industrial relationships and the principles upon which the production of economic goods is based. Problems arising from the development of mass production, competitive enterprises, diversification of industry and social control; working relations. Some study will be made of the corporation, its effectiveness, and its social influences.
3 class hours. Credit, 3
Professor Cance and Assistant Professor Gamble.

* During the leave of absence of Professor Mackimmie in 1936–37, Professor Rand is serving as Head of the Division.

52. II. Money, Banking, and Credit. — For juniors; seniors and graduate students may elect. The development of the monetary and banking systems of the United States; the operation of various types of financial institutions; the use of credit in economic production and the development, organization, and operation of agricultural and industrial credit institutions.
3 class hours. Credit, 3.
Assistant Professor Gamble.

53. I. Marketing and Marketing Problems. — For juniors; seniors and graduate students may elect. A study of the forces and conditions which determine prices and the mechanism, methods, and problems concerned with transporting, storing, and distributing economic goods. Supply and demand, determination and course of prices, terminal facilities, the middleman system, speculation, protective legislation, the retail market, and direct sales are considered. The characteristics and possibilities of the New England market are given special attention. Lectures, readings, assigned studies, and field work. Class trip to Boston or Springfield for market inspection, at an estimated expense of five to ten dollars.
3 class hours. Credit, 3.
Professor Cance.

54. II. Corporation Finance (1936–37). Alternates with Course 78. — For juniors and seniors. Types of business organization and their essential features; the nature and growth of the corporation and its economic and social significance; types of securities used for raising capital; promotion; financial structure of various types of concerns; administration of income; control; holding company finance; corporate failure and reorganization are considered.
3 class hours. Credit, 3.
Assistant Professor Gamble.

55. I. Economics of Consumption. — For juniors; seniors and graduate students may elect. The purpose of this course is a consideration of the importance of consumption in modern industry and commerce. It includes a study of the laws of consumption, standards of living, sources and factors determining family incomes, and of the administration of these incomes as shown by the expenditures of the nation and of various groups. The relation of consumption to the problems of population and to the development of society is also studied. Lectures, assigned readings, and class discussions.
3 class hours. Credit, 3.
Mr. Larcom.

58. II.. Business Law. — For juniors, seniors may elect. This course consists of a particular study, drawing, reading, and interpretation of contracts and sales; with specific problem work. Fundamentally, it is a course in logical reasoning using legal principles as its basic material. Wills, commercial paper, carriers, real estate agency, public and personal rights presented by lecture during the course.
3 class hours. Credit, 3.
Mr. Smart.

75. I. Current Economic Problems. — For seniors and graduate students; juniors may elect. An advanced course for those desirous of studying more intensively some current economic problems. Studies in economic philosophy and the economic aspects and consequences of progress in the physical and biological sciences, current economic questions, agricultural legislation, and government aids and subsidies are some of the problems discussed. Particular attention will be given to economic problems relating to New England. Students will be encouraged to pursue lines of individual interest.
3 class hours. Credit, 3.
Professor Cance.

76. II. Principles of Transportation. — For seniors and graduate students; juniors may elect. The development of highway, waterway, and railway transportation, and its relation to the agricultural and industrial development of the country; the principles governing the operation and control of transportation

agencies; present-day problems relating to the shipment of farm and industrial products, rates, fatalities, and services; methods of reducing wastes in transportation; the economics of the good roads movement and of motor transportation. Lectures, text, and field work.
3 class hours. Credit, 3.
Professor CANCE.

77. I. ECONOMICS OF FOREIGN TRADE (1937–38). Alternates with Course 79. — For seniors; juniors and graduate students may elect. A study of the principles and practices of international trade, including a survey of historical trends of the foreign trade of the United States; the business methods of foreign traders; foreign exchange; and the efforts made by governments and business groups to influence foreign trade. Textbook, lectures, class discussions, and class trip to Boston at an estimated expense of twelve to fifteen dollars.
3 class hours. Credit, 3.
Assistant Professor GAMBLE.

78. II. PUBLIC FINANCE (1937–38). Alternates with Course 54. — For juniors and seniors. Principles of public revenues and expenditures with special emphasis on the systems and problems of taxation.
3 class hours. Credit, 3.
Assistant Professor GAMBLE.

79. I. LABOR PROBLEMS (1936–37). Alternates with Course 77. — For seniors. An analysis of the background and character of the modern labor problem with special reference to the United States. Topics to be considered include the problems of wages, hours, working conditions and unemployment; the trade union movement; and some agencies for the promotion of industrial peace. Attention will be given to the effects of the National Recovery Act upon the position and the problems of labor.
3 class hours. Credit, 3.
Assistant Professor GAMBLE.

80. II. ECONOMIC THEORY AND SOCIAL PROGRESS (1937–38). — For seniors and graduate students. This course logically follows Economics 75 and is designed to point out the principles and philosophies underlying current economic thought and social practices. Given in alternate years.
3 class hours. Credit, 3.
Professor CANCE.

81. I. ELEMENTARY BUSINESS ACCOUNTING. — For seniors; juniors may elect. This course aims to give the student an elementary working knowledge of the principles underlying the accounting system in the gathering, analysis, and interpretation of accounting data, and the methods used in accounting and preparing the usual types of business statements for individual proprietorship businesses and partnerships. The managerial uses of accounting as a means of business control are the keynote of the course.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Mr. LARCOM.

82. II. ADVANCED BUSINESS ACCOUNTING. — For seniors. This course covers the problems of corporation accounting and accounting for cooperative organizations. Considerable time is spent on problems in amortization, depreciation, and the preparation, analysis, and interpretation of financial statements.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Mr. LARCOM.

85. I. LEGAL ASPECTS OF ECONOMIC TRANSACTIONS. — For seniors and graduate students. A continuation of Course 58.
3 class hours. Credit, 3.
Prerequisite, Economics 58. Mr. SMART.

91. I. 92. II. SEMINAR. — For seniors and graduate students. Research in economic theory; problems of labor, commerce, and industry. Library work and reports. If desirable some other economic study may be substituted.
1 or 2 2-hour conference periods, credit, 1 to 3.
The DEPARTMENT.

Education and Psychology.

Professor Welles, Professor Glick, Assistant Professor Neet, Mr. Purvis, Mr. Heald,[1] Mr. Carpenter.

The work in this department may be said to have three major objectives: (1) to be of maximum service to those students who plan to engage in some form of educational work; (2) to provide training of a cultural nature in education, psychology, and philosophy for the educated layman; (3) to afford intensive training for those who wish to specialize in any of the subject matter fields of the department. Students intending to teach vocational agriculture or related subjects need to consult the head of the department and the State Agent for Agricultural Teacher-training as early as possible to insure a desirable range of preparation.[2]

95. **I** and **II.** Problems in Education, Psychology, or Philosophy. — For seniors who have shown outstanding ability, by arrangement with the members of the department. Problems covering important phases of education, psychology, or philosophy to be worked out and studied by special readings, surveys, reports, and observation. A thesis covering the semester's work is required. This course may be taken for one semester only.

Credit, 2.
The Department.

Education.

Elective Courses.

65. **I.** Principles and Methods of Teaching. — For juniors; seniors may elect. The course is offered for those who are expecting to teach. By means of text, case studies, current educational literature, related books and lectures, teaching and management ideals and procedures are set up. The general plan is one of discussion with numerous short class papers. During the final weeks of the semester attention is given the special methods of teaching certain subjects in secondary schools.
3 class hours. Credit, 3.
Professor Welles.

67. **I.** History of Education. — For juniors; seniors may elect. This course opens a long vista in the development of one very important human endeavor — the passing on to succeeding generations of the accumulated social heritage of the race. The knowledge of this history is assuming greater importance for all teachers in the minds of educational supervisors. The main support is text and supplementary reading with lectures and discussion for clarity and emphasis.
3 class hours. Credit, 3.
Mr. Purvis.

72. **II.** Vocational Education in Agriculture. — For juniors; seniors and graduate students may elect with permission of the head of the department. The course demands certain prerequisites of experience and objective which make permission necessary. It is the first of the series of special courses (72, 78, 82) with a survey of vocational education and an introduction to the teaching of agriculture in secondary schools. Information and observation preparatory to the apprenticeship course. Required of candidates for the agricultural teacher-training certificate.
3 class hours. Credit, 3.
Professor Welles and Vocational Division of State Department of Education.

74. **II.** Classroom Management. — For seniors, juniors may elect. An offering to prospective teachers for forming right ideals about working conditions in schools and ways of maintaining such conditions. A supplement to the course in Principles and Methods of Teaching by emphasis on class management in the desire to prevent some of the many failures of beginners in teaching. Text material, discussion, and case studies with some observation.
3 class hours. Credit, 3.
Professor Welles.

[1] State Agent for Agricultural Teacher-Training representing the State Department of Education in the administration of vocational education acts.

[2] A vocational teacher-training certificate will be awarded by the State Division of Vocational Education to those who qualify. (Required courses, 72, 78, 82. Recommended course 65.)

76. II. Methods in Extension Teaching. — For seniors; juniors and others qualified may elect. The course deals with various phases of extension work and the methods by which this work is accomplished. The specific lines studied are those of the state director, state leaders, agricultural and home economics specialists, and county agricultural, home demonstration, and 4-H club agents. The different phases of the work will be discussed by members of the extension staff who are specialists in their particular lines. The course is valuable to all teachers doing any club work in schools.
2 class hours. Credit, 2.
Mr. Carpenter.

78. I and II. Apprentice Teaching. — For a limited number of qualified candidates in vocational education. A full year in absentia, normally following the junior year in college, teaching agriculture, horticulture, and related subjects. Candidates should have completed the course in Education 72, and in Education 65 if possible, and must apply early to the head of the department. Occasionally open to graduate students.
Maximum credit, 6 semester hours.
Professor Welles and Vocational Division of State Department of Education.

79. I. Educational Tests and Measurements. — For seniors, juniors may elect. The course is designed to assist teachers in judging and improving their instruction. The most serviceable tests and scales for measuring school achievement are considered; test construction, administration, scoring and interpretation of results are studied and practiced. The statistical procedures involved in testing techniques are also briefly considered.
3 class hours. Credit, 3.
Mr. Purvis.

80. I and II. Supervised Teaching. — For seniors; qualified juniors may be admitted. Enrollment in the course requires consent of instructor in view of its specialized nature. Special professional reading, assigned and optional, is required. A conference is required each week for reporting on the work each student is doing and for general discussion. The amount of credit depends upon the amount and character of the work. A thesis covering all work in the course during the semester is required.
1 class hour. 2 to 4 laboratory hours, credit, 1–2.
Professor Welles and Mr. Purvis.

82. II. Technique of Teaching Agriculture. — For seniors and others qualified, by arrangement with the head of the department. By preference this course follows Courses 72 and 78. It covers the material, methods, policies, and special requirements of the state for teaching agriculture and related subjects in vocational schools. Required of candidates for the agricultural teacher-training certificate.
2 class hours. Credit, 2.
Professor Welles and Vocational Division of State Department of Education.

84. II. Secondary Education. — For seniors; juniors may elect. The course has two main objectives: (1) To give a perspective of the high school as to its aims, relations, organization, and functions; (2) To present in some detail the agencies and operations that carry these out through the curricula, schedules, and extra-curricular activities. A basic text is used with lectures, supplementary reading and problem assignments.
3 class hours. Credit, 3.
Mr. Purvis.

Psychology.

Required Course.

26. I and II. General Psychology. — For sophomores. This is an introductory course dealing with the theories and principles of psychology in regard to the understanding and control of human thought, feeling, and action.
3 class hours. Credit, 3.
Professor Glick and Assistant Professor Neet.

51. **I.** Experimental Psychology. — For juniors; seniors may elect. The course is designed to acquaint students with typical problems and techniques of research in psychology. Each student will be allowed to spend a certain amount of time on an independent problem in addition to demonstrations, assigned readings, and class experiments.
3 class hours. Credit, 3.
Assistant Professor Neet.

Prerequisite, Psychology 26.

54. **II.** Educational Psychology. — For juniors, seniors may elect. The course deals with the native equipment of the child, the nature of learning, individual differences, mental testing, transfer of training, etc.
3 class hours. Credit, 3.
Professor Glick and Mr. Purvis.

Prerequisite, Psychology 26 or the consent of the instructor.

85. **I.** Abnormal Psychology and Mental Hygiene. — For seniors; juniors may elect. A study of abnormal personalities with a view to a better understanding and control of oneself.
3 class hours. Credit, 3.
Assistant Professor Neet.

Prerequisite, Psychology 26.

86. **II.** Industrial Psychology. — For seniors; juniors may elect. A study of the human factor in business and industry.
3 class hours. Credit, 3.
Assistant Professor Neet.

Prerequisite, Psychology 26.

89. **I.** Psychology of Guidance. — For seniors, juniors may elect. Guidance is conceived in a broad sense, and such topics as religious and esthetic guidance are considered as well as vocational guidance. Special attention is given to the study of interests, aptitudes, and personality traits, and the psychological devices for measuring and evaluating these are considered and applied. Practice is given in administering and scoring tests, and statistical devices are used to interpret results.
3 class hours. Credit, 3.
Professor Glick.

Prerequisite, Psychology 26.

90. **II.** Contemporary Psychologies. — For seniors; juniors may elect. A study of the various contemporary schools or theories of psychology with an attempt to evaluate each in its application to psychological problems in general with emphasis upon child psychology in particular.
2 class hours. Credit, 2.
Assistant Professor Neet.

Prerequisite, Psychology 26 or the consent of the instructor.

Philosophy.

Elective Courses.

61. **I.** Fundamentals of Philosophy. — For juniors; seniors may elect. A general approach to the study of philosophy both from the standpoint of method and content. This course attempts to provide a background for the understanding and evaluation of theories of education, religion, ethics, metaphysics, etc.
3 class hours. Credit, 3.
Professor Glick.

62. **II.** History of Philosophy (1937–38). — For juniors; seniors may elect. A survey of the development of thought from the early Greeks to the recent past. Emphasis is placed upon the relation of philosophy to life as a whole with emphasis upon ethical, political, religious, educational, and metaphysical problems. Given in alternate years.
3 class hours. Credit, 3.
Professor Glick.

64. II. Ethics (1936–37). — For juniors; seniors may elect. A study of the fundamental ethical theories and practices both historical and contemporary. Ethical theories are studied in relation to different types of civilizations and an attempt is made to evaluate the significance of each in our present civilization. Given in alternate years.
3 class hours. Credit, 3.
Professor Glick.

History and Sociology.

Professor Mackimmie,* Assistant Professor Cutler, Assistant Professor Caldwell, Mr. Williams, Mr. Cary.

The courses in history and sociology are planned with the purpose of giving the student that knowledge and understanding of the important factors and problems in this field of study and life which every active citizen and educated man ought to have. In addition they enable a student to specialize in history and sociology and related science, or in social work.

History.

Required Course.

1. I and II. History of the United States. — For freshmen. A study of the growth of the United States with emphasis upon the development of republican principles.
3 class hours. Credit, 3.
Assistant Professor Caldwell and Mr. Cary.

Elective Courses.

25. I. American Government. — For sophomores. A study of the historical development, structure, and operation of our government.
3 class hours. Credit, 3.
Assistant Professor Caldwell.

27. I. Economic History of the United States. — For sophomores. A study of the economic development of the United States, with attention to the interaction beween economic, social, and poliical conditions.
3 class hours. Credit, 3.
Assistant Professor Caldwell.

32. II. English History. — For sophomores; juniors and seniors may elect. A study of the political, social, and religious movements in England, with special reference to an understanding of English literature.
3 class hours. Credit, 3.
Professor Mackimmie and Assistant Professor Caldwell.

51. I. Government. — For juniors and seniors. Forms and methods of the governments of Europe; historic types and theories of government; progress and problems of democarcy, and new reform movements in organization and administration; new tendencies towards social legislation and extension of governmental control.
3 class hours. Credit, 3.
Professor Mackimmie.

53. I. Modern European History. — For juniors and seniors. The political and social history of the principal countries of Europe from 1500 to 1830.
3 class hours. Credit, 3.
Professor Mackimmie and Assistant Professor Caldwell.

54. II. European History since 1830. — For juniors and seniors. The rise of nationalism and imperialism; the unification of Italy and of Germany; the Third French Republic; European expansion; the Russo-Japanese War; the World War. While this course is a continuation of Course 53, it is complete in itself and may be elected by those who have had no history training. Its aim is to provide a basis for an understanding of present-day conditions.
3 class hours. Credit, 3.
Professor Mackimmie and Assistant Professor Caldwell.

* During the leave of absence of Professor Mackimmie in 1936–37 Professor Lawrence B. Packard of Amherst College will teach certain courses in History.

55. I. The History of Religions. — For juniors and seniors. Primitive religions, Hinduism, Buddhism, Mohammedanism, and Christianity. Consideration will be given to the application of the material of the course to current religious problems.
3 class hours. Credit, 3.
Mr. Williams.

56. II. The Literature of the Bible. — For juniors and seniors. An introduction to the literature and teachings of the Old and New Testaments.
3 class hours. Credit, 3.
Mr. Williams.

58. II. The Problems of Religion. — For juniors and seniors. The field of this course is that of the philosophy of religion. However, no attempt will be made to cover all the problems of this discipline. Only those problems will be considered which the students electing the course desire to have considered.
2 class hours. Credit, 2.
Mr. Williams.

60. II. The United States since the Civil War. — For juniors and seniors. An historical treatment of the political, economic, social, and intellectual development in recent years. The new South, development of the West, the rise of cities, expansion of the power of the Federal Government, social politics, progressivism, American Imperialism and participation in world affairs, American life, letters and art.
3 class hours. Credit, 3.
Mr. Cary.

76. II. History of the Renaissance. — For seniors only. The later Middle Ages; the Church at the height of power; the rise of nationalities; the Italian towns; the New Learning and its relation to art, science, invention, geographical discoveries; spread and effects of the Renaissance.
3 class hours. Credit, 3.
Professor Mackimmie.

Sociology.

Elective Courses.

27. I. Elements of Sociology. — For sophomores; others admitted by permission of instructor. An outline study of the social order, and of the individual considered as a member of his various groups.
3 class hours. Credit, 3.
Assistant Professor Cutler.

51. I. 52. II. Systematic Sociology. — For juniors; seniors may elect. A study and classification of the uniformities observable in human social behavior, with practical application of the findings. These courses are sequential, but may be elected independently.
3 class hours. Credit, 3.
Assistant Professor Cutler.

54. II. Civilization. — For seniors; juniors may elect. A sociological study of man in the successive historical periods; influential factors in American life are analyzed.
5 class hours. Credit, 5.
Assistant Professor Cutler.

75. I. Problems of Social Reform. — For seniors; juniors may elect. Study of abuses affecting the home, recreation, race, business, industry, farming, family welfare, public health, government, international relations, mental disease, and crime; the charitable and correctional institutions of Massachusetts as agencies of reform receive special attention.
5 class hours. Credit, 5.
Assistant Professor Cutler.

77. I. Field Work. — For seniors; juniors may elect. Students, under direction of the instructor, analyze and organize such sociological knowledge as they

acquire through their own social service experience, and include all in a comprehensive report; projects must be approved in advance by the instructor.
4 laboratory hours, credit, 2.
Assistant Professor CUTLER.
Prerequisite, Sociology 27, or the consent of the instructor.

78. II. SOCIOLOGICAL RESEARCH. — For seniors; juniors may elect. A study of the methods of research employed by sociologists and of the logical and mathematical analysis to which the latter subject their findings; social case work is explained; phases of social theory are defined.
3 class hours. Credit, 3.
Assistant Professor CUTLER.

79. I. 80. II. SEMINAR. — Enrolment is open to graduate students, and seniors specializing in social science who are especially qualified. Courses are sequential but may be elected independently.
2 class hours. Credit, 2.
Professors MACKIMMIE and CUTLER.

84. II. CONSERVATION OF THE FAMILY. — For seniors. A study of some of the modern problems in family life; ways in which an individual and society can help to conserve the family; some hindrances to normal family life. This course aims to develop an intelligent social consciousness and a sense of individual responsibility in family relationships.
3 class hours. Credit, 3.
Professor SKINNER.

Languages and Literature.

Professor RAND, Professor JULIAN, Professor PRINCE, Assistant Professor GODING, Assistant Professor FRAKER, Assistant Professor GOLDBERG, Mr. ELLERT, Mr. TROY, Mr. HELMING, Mr. STRATTON, Mr. LYLE, Miss HORRIGAN, Mr. DOW.

The courses in English are intended to enable students to express themselves effectively and to appreciate the ideals of English-speaking people throughout their history; those in French, Spanish, and German to give a practical knowledge of these languages for the purpose of wider reading and research, leading to a better understanding of the art and the science and the peoples concerned; those in music, to furnish in a non-technical way, a background of the history of music and its interpretation.

ENGLISH.

Required Courses.

1. I. 2. II. ENGLISH COMPOSITION. — For freshmen. Intended to teach straight thinking, sound structure, clear and correct expression. Lectures, recitations, theme writing, and conferences.
3 class hours. Credit, 3.
Professors PRINCE and RAND, Dr. GOLDBERG, Mr. TROY, Mr. HELMING, Miss HORRIGAN.

25. I. 26. II. A SURVEY OF ENGLISH LITERATURE. — For sophomores. A general reading course with lectures, from the beginning of English literature to the end of the Nineteenth Century.
2 class hours. Credit, 2.
Professor PRINCE.

29. I. 30. II. PUBLIC SPEAKING. — For sophomores. The purpose of the course is to teach, by means of practice in the composition, memorization and delivery of short speeches, an effective, confident, and clearly enunciated presentation.
1 class hour. Credit, 1.
Mr. HELMING, Mr. LYLE, Miss HORRIGAN, Mr. DOW.

Elective Courses.

50. II. ARGUMENTATION AND ORATORY. — For juniors and seniors. It presents the fundamental principles of argumentation with the principles and the

practice of formal oratory, prescribing the preparation and delivery of one original oration, and reading in oratory. It is recommended for those who desire to enter the intercollegiate debates or the Flint Contest.
3 class hours. Credit, 3.
Professor PRINCE.

51. I. ROMANTIC POETRY (1936–37). — For juniors and seniors. A study chiefly in the beginning of Romanticism in English poetry as found in the work of Collins, Gray, Burns, and Blake, with considerable attention to the culmination of Romanticism in the poetry of Shelley and Keats. Given in alternate years.
3 class hours. Credit, 3.
Professor PRINCE.

52. II. ENGLISH LITERATURE FROM DONNE TO MILTON (1936–37). — For juniors and seniors. A treatment of the "Metaphysical School," the "Church Poets," and other writers of the period is brought to bear upon an intensive study of Milton. Given in alternate years.
3 class hours. Credit, 3.
Dr. GOLDBERG.

53. I. ENGLISH PROSE OF THE EIGHTEENTH CENTURY (1937–38). — For juniors and seniors. A brief exposition of the thinking of the period, in philosophy, government, and criticism is followed by a study of essayists and letter writers from Defoe to Godwin. Given in alternate years.
3 class hours. Credit, 3.
Professor PRINCE.

55. I. ENGLISH PROSE OF THE NINETEENTH CENTURY. — For juniors and seniors. Consideration of the major prose writers of the early part of the century, particularly in relation to the English periodicals of their day and to the Romantic Movement in England, France, and Germany, is followed by a study of the chief Victorian prose writers. Especial attention is devoted to Carlyle, Arnold, and Newman.
3 class hours. Credit, 3.
Dr. GOLDBERG.

56. II. AMERICAN LITERATURE (1936–37). — For juniors and seniors. A course in the chief American writers, among those studied being Irving, Cooper, Melville, Hawthorne, Emerson, Freneau, Bryant, Poe, Longfellow, and Whitman. Given in alternate years.
3 class hours. Credit, 3.
Professor PRINCE.

57. I. EXTEMPORE SPEECH. — For juniors and seniors. This course is intended to give the student practice in speaking from memorized outlines before an audience. Registration limited to fifteen.
3 class hours. Credit, 3.
Mr. DOW.

58. II. VICTORIAN POETRY (1937–38). — For juniors and seniors. A study of the Pre-Raphaelites, Tennyson, and Browning. Given in alternate years.
3 class hours. Credit, 3.
Professor RAND.

60. II. CHAUCER (1937–38). — For juniors and seniors. Reading of the principal works of Chaucer; a study of Chaucer's development as a creative artist; an attempt to appreciate his humanism. Given in alternate years.
3 class hours. Credit, 3.
Professor PRINCE.

61. I. BIOGRAPHY (1938–39). — For juniors and seniors. A study of distinguished biographies written in English and noteworthy both as portraits of significant people and as examples of biographical method. Given in alternate years.
3 class hours. Credit, 3.
Mr. HELMING.

64. II. Romantic Poetry (1936–37). — For juniors and seniors. A contrasting study of Byron and the Lake Poets, and in some ways a continuation of Course 51. Given in alternate years.
3 class hours. Credit, 3.
Professor Rand.

65. I. Creative Writing. — For juniors and seniors. Advanced work in writing based upon specimens by authors of established reputation and upon the personal experience of the student.
3 class hours. Credit, 3.
Professor Rand (1936–37), Mr. Helming (1937–38), Mr. Troy (yearly).

67. I. Library Research (1937–38). — For juniors and seniors. Each student makes a considerable investigation of a subject of his own selection. An orderly accumulation of material is followed by one or more formal interpretations of its significance. Given in alternate years.
3 class hours. Credit, 3.
Professor Rand.

70. II. Tudor Literature. — For juniors and seniors. A study of the non-dramatic verse and prose of the Tudor period, with special emphasis upon Spenser's "Faerie Queene." Given every year beginning 1937–38.
3 class hours. Credit, 3.
Mr. Troy.

71. I. Elizabethan Dramatists. — For juniors and seniors. A study of Elizabethan drama, exclusive of Shakespeare, with special consideration of the plays of such men as Lyly, Peele, Greene, Kyd, Marlowe, Jonson, Beaumont, Fletcher, Webster, Massinger.
3 class hours. Credit, 3.
Professor Prince.

72. II. History of Literary Criticism (1937–38). — For juniors and seniors. Major theories of criticism, from Aristotle to the present, are considered in relation to the philosophic backgrounds out of which they emerge and to attendant critical practice. This course is designed especially for students concentrating in languages and literature. Given in alternate years.
3 class hours. Credit, 3.
Dr. Goldberg.

76. II. English Prose Fiction. — For juniors and seniors. A course of lectures and reading designed to illustrate the development of English prose fiction, with emphasis upon the great novels of the eighteenth and nineteenth centuries.
3 class hours. Credit, 3.
Mr. Helming.

79. I. Shakespeare. — For juniors and seniors. This course is based upon the reading of about thirty of Shakespeare's plays, and attempts both to indicate the evolution of the dramatist and to emphasize the various phases of his art.
3 class hours. Credit, 3.
Professor Rand.

80. II. Modern Drama (1936–37). — For juniors and seniors. This course traces the development of English drama from the time of Ibsen to the present day. Its purpose is to impart an intelligent and sympathetic interest in the theatre of the twentieth century. Given in alternate years.
3 class hours. Credit, 3.
Professor Rand.

82. II. Modern Poetry (1937–38). — For juniors and seniors. This course attempts to trace the spirit of twentieth century poetry from such authors as Hardy, Whitman, and Emily Dickinson to those of the present day. Given in alternate years.
3 class hours. Credit, 3.
Professor Rand.

French.

Elective Courses.

1. I. 2. II. Elementary French. — For freshmen; sophomores, juniors, and seniors may elect. The essentials of grammar are rapidly taught and will be accompanied by as much reading as possible.
3 class hours. Credit, 3.
Assistant Professors Fraker and Goding.

5. I. 6. II. Intermediate French. — For freshmen and sophomores; juniors and seniors may elect. Grammar review and composition. Training for rapid reading. The reading of short stories, novels, and plays, selected readings from periodicals and scientific texts in the library.
3 class hours. Credit, 3.
Assistant Professors Fraker and Goding.
Prerequisites, French 1 and 2 or their equivalent.

7. I. 8. II. French Survey. — For freshmen and sophomores; juniors and seniors may elect. A general survey of the history of French literature and the development of French culture, with representative works of the important periods.
3 class hours. Credit, 3.
Assistant Professors Fraker and Goding.
Prerequisites, French 5 and 6 or their equivalent.

29. I. 30. II. French Classicism (1937–38). Alternate with Courses 31. I and 32. II. — For sophomores; juniors and seniors may elect. A survey of the Classical period, with readings from representative works.
3 class hours. Credit, 3.
Assistant Professor Fraker.
Prerequisites, French 7 and 8 or their equivalent.

31. I. French Romanticism (1936–37). Alternates with Course 29. — For sophomores; juniors and seniors may elect. A detailed study of the Romantic period. Readings from Hugo, de Vigny, Lamartine, de Musset, and others. The influence of English, German, and Italian literature is stressed.
3 class hours. Credit, 3.
Assistant Professor Goding.
Prerequisites, French 7 and 8 or their equivalent.

32. II. French Realism (1936–37). Alternates with Course 30. — For sophomores; juniors and seniors may elect. A detailed study of the Realistic period and the modern writers. Readings from Balzac, Flaubert, Stendahl, Loti, Daudet, Anatole France, and others.
3 class hours. Credit, 3.
Assistant Professor Goding.
Prerequisites, French 7 and 8 or their equivalent.

71. I. Voltaire (1936–37). Alternates with Course 79. — For juniors and seniors. A study of the eighteenth century through the life and works of Voltaire.
3 class hours. Credit, 3.
Assistant Professor Fraker.
Prerequisites, French 7 and 8 or their equivalent.

72. II. French Lyricism (1936–37). Alternates with Course 80. — For juniors and seniors. A study of the French lyric poets, including excerpts in modern translation from the Middle Ages and from the various modern movements through the nineteenth century. Collateral readings and reports.
3 class hours. Credit, 3.
Assistant Professor Fraker.
Prerequisites, French 7 and 8 or their equivalent.

79. I. Balzac (1937–38). Alternates with Course 71. — For juniors and seniors. A study of the life, works, and ideas of Balzac based upon a careful reading of about fifteen of his most important novels.
3 class hours. Credit, 3.
Assistant Professor Goding.

Prerequisites, French 7 and 8 or their equivalent.

80. II. Advanced Grammar and Composition (1937–38). Alternates with Course 72. — For seniors; juniors may elect with the consent of the instructor. A thorough review of grammar, pronunciation, and the phonetic method. The course also includes practice teaching and outside reading on methods of teaching French.
3 class hours. Credit, 3.
Assistant Professor Goding.

Spanish.

Elective Courses.

51. I. 52. II. Elementary Spanish. — For juniors and seniors; open to other students upon arrangement. Grammar, exercises in composition and conversation, reading of selected short stories.
3 class hours. Credit, 3
Assistant Professor Fraker.

75. I. 76. II. Modern Spanish Authors. — For seniors. Reading from modern Spanish novel and drama; composition; outside reading.
3 class hours. Credit, 3.
Assistant Professor Fraker.

Prerequisite, Spanish 52.

German.

Elective Courses.

1. I. 2. II. Elementary German. — For freshmen; sophomores, juniors, and seniors may elect. Grammar, reading, and prose composition. Special emphasis is placed on the acquirement of a fundamental stem vocabulary and the ability to understand simple German paragraphs in German.
3 class hours. Credit, 3.
Professor Julian, Mr. Ellert, and Mr. Lyle.

5. I. 6. II. The Classical Period. — For freshmen; sophomores, juniors and seniors may elect. Reading and study of some important literary productions of the classical period; spoken German; passages of prose and poetry to commit to memory.
3 class hours. Credit, 3.
Mr. Ellert.

Prerequisite, German 25 and 26, or Entrance German.

25. I. 26. II. The Short Story. — For sophomores; juniors and seniors may elect. The German short story; the simpler German drama; grammar review and advanced prose composition. Simple passages of prose and poetry to commit to memory.
3 class hours. Credit, 3.
Mr. Ellert and Mr. Lyle.

Prerequisites, German 1 and 2.

27. I. 28. II. Early German Literature and History. — For sophomores; juniors and seniors may elect. The *Niebelungenlied* and *Parzival* in modern German versions.
3 class hours. Credit, 3.
Professor Julian.

Prerequisites, German 5 and 6, or 25 and 26.

55. I. 56. II. Advanced German. — For juniors and seniors. The "Storm and Stress" period of German literature, with study of the early plays of Goethe

and Schiller. The Romantic period from Novalis to Heine, with study of poets, dramatists, critics, and philosophers.
3 class hours. Credit, 3.
Mr. Ellert.

Prerequisites, German 5 and 6, or 25 and 26.

81. I. 82. II. Scientific German. — For seniors. Intensive and specialized reading of literature in standard German scientific journals and reference books.
3 class hours. Credit, 3.
Professor Julian.

Prerequisites, German 5 and 6, or 25 and 26.

75. I. 76. II. Goethe's Faust. — For seniors.
3 class hours. Credit, 3.
Professor Julian.

Prerequisites, German 5 and 6, or 27 and 28.

79. I. 80. II. Conversational German. — Open to advanced students in German, by permission of the instructor in charge. Practice in the oral use of German, based on reading material prepared in advance, and dealing with present-day Germany.
2 class hours. Credit, 2.
Professor Julian and ———.

Music.

Elective Courses.

1. I. 2. II. Choral Singing. — For freshmen, sophomores, juniors, and seniors. This course is designed to acquaint the student, through study and performance, with examples of the best choral music of all periods. Admission is by approval of the instructor. This course is recommended for those who desire to prepare themselves for participation in choral services.
2 scheduled hours. Credit, 1.
Mr. Stratton.

51. I. History and Appreciation of Music. — For juniors and seniors. The Classical School. Works of Bach, Handel, Haydn, and Mozart are performed and studied. Lectures, musical illustrations, and outside readings.
3 scheduled hours. Credit, 2.
Assistant Professor Goding.

52. II. History and Appreciation of Music. — For juniors and seniors. A continuation of Course 51. The Romantic School: Beethoven, Schubert, Weber, Mendelssohn, Schumann, Chopin, Berlioz, Liszt. The Italian, French, and German schools of opera; modern and contemporary composers.
3 scheduled hours. Credit, 2.
Assistant Professor Goding.

Prerequisite, Music 51.

61. I. 62. II. Evolution of Modern Music. — For juniors and seniors. A thorough survey is made of the most important trends and personalities of music, from the earliest times to the present. It is designed to acquaint the student with the background for the understanding of contemporary music, which is treated in detail. Lectures, illustrations, and outside readings.
3 scheduled hours. Credit, 2.
Mr. Stratton.

75. I. 76. II. Harmony. — For juniors and seniors. A study of the development of harmonic principles up to the present time. Part-writing for four voices, and harmonic analysis. Emphasis is placed upon ear-training, to promote the student's aural imagination and recognition of all material studied. Previous musical experience is desirable, but not required. Course 75 is prerequisite to Course 76.
3 scheduled hours. Credit, 2.
Mr. Stratton.

DIVISION OF PHYSICAL EDUCATION.

Professor Hicks.

Student Health.

Professor Radcliffe, Assistant Professor Jenney, Dr. Rakieten.

Required Course.

1. **I.** Hygiene. — For freshmen. Given in separate sections for men and women. Lectures on personal hygiene, including the physiological basis for sound health habits.
2 class hours for one-half semester. Credit, 1.
Dr. Rakieten.

Physical Education for Men.

Professor Gore, Professor Radcliffe, Professor Caraway, Assistant Professor Derby, Assistant Professor Briggs, Mr. Ball, Mr. Rogers, Mr. Kauffman.

The work of Physical Education for Men covers the required work in Physical Education the first year; elective work in Team Game Participation the second year, and the opportunity to specialize the last two years either in Physical Education and Teacher Coaching or in the field of Recreation.

Required Courses.

3. **I.** Physical Education. — For freshmen. One hour a week of exposure to carry-over value and life-time sport instruction. The development of recreational aptitudes is stressed. Team Game participation is required. Men will elect two seasonal athletic activities per semester or their equivalent. Special work is required for those freshmen whose physical examinations show that postural corrective work is indicated.
1 class hour. Credit, 1.
The Department.

4. **II.** Physical Education. — For freshmen. The one hour a week requirement of carry-over value and life-time sport instruction and the Team Game participation requirement of two seasonal athletic activities per semester or their equivalent is continued.
1 class hour. Credit, 1.
The Department.

Elective Courses.

23. **I.** Physical Education. — For sophomores. Team Game participation: men may elect two seasonal athletic activities per semester or their equivalent.
Credit, 1.
The Department.

24. **II.** Physical Education. — For sophomores. Team Game participation: men may elect two seasonal athletic activities per semester or their equivalent.
Credit, 1.
The Department.

Admission by permission only.

51. **I.** Introductory Course for Teacher-Coaches. — For juniors and seniors. This course outlines the coaching of football, soccer, and basketball.
3 class hours. Credit, 3.
Professors Caraway and Briggs.

52. **II.** Introductory Course for Teacher-Coaches. — For juniors and seniors. Continuation of Course 51. This course outlines the coaching of baseball, track and field athletics, and hockey and winter sports, also athletic pedagogy.
3 class hours. Credit, 3.
Professor Caraway, Assistant Professor Derby, Mr. Ball.

53. **I.** Physical Education Theory and Practice. — For juniors and seniors. This course includes the objectives, organization, significance, and content of

physical education in the grade schools. The course is correlated with the requirements of the State Department of Education.
2 class hours. 1 2-hour laboratory period, by arrangement, credit, 3.
Assistant Professor DERBY.

54. **II.** PHYSICAL EDUCATION THEORY AND PRACTICE. — For juniors and seniors. This course includes the objectives, significance, organization and content of physical education in junior and senior high school. The course is correlated with the requirements of the State Department of Education.
2 class hours. 1 2-hour laboratory period, credit, 3.
Assistant Professor DERBY.

55. **I.** HISTORY AND PURPOSES OF PHYSICAL EDUCATION. — For juniors and seniors. A brief study of the history of the development of the various systems of physical education and a study of the aims and ideals of present-day physical education. Lectures, textbooks, reports on assigned readings, and a final outline.
2 class hours. Credit, 2.
Professor GORE.

56. **II.** ORGANIZATION AND ADMINISTRATION OF PHYSICAL EDUCATION. — For seniors. Considers the organization and administration of a department of physical education.
2 class hours. Credit, 2.
Professor GORE.

57. **I.** CAMPING TECHNIQUE. — For juniors and seniors. This course covers the details of camping technique, including the special skills of camping in the open.
2 class hours. 1 2-hour laboratory period, by arrangement, credit, 3.
Professor GORE co-operating witht the DEPARTMENT OF FORESTRY and other Departments.

58. **II.** CAMPING LEADERSHIP, ADMINISTRATION AND MAINTENANCE. — For juniors and seniors. The development of the camping idea. Organized camps as a part of education, camp standards and practices, camp program building. The qualifications necessary for camp counselors and camp administrators.
2 class hours. 1 2-hour laboratory period, by arrangement, credit, 3.
Professore GORE.

59. **I.** SCOUTING ELEMENTS AND PRINCIPLES. — For juniors and seniors. A course in the elements and principles of Scoutmastership.
1 class hour. 1 2-hour laboratory period, credit, 2.
Professor GORE co-operating with LOCAL SCOUT EXECUTIVES.

71. **I.** 72. **II.** SPECIAL PROBLEMS COURSE IN PHYSICAL EDUCATION. — For seniors specializing in physical education. Presentation and discussion of research work in physical education, health education or athletics. Each student will make a special study of some phase of physical education.
3 class hours. Credit, 3.
The DEPARTMENT.

73. **I.** RECREATION ACTIVITIES AND SKILLS. — For seniors; juniors may elect. A study of recreation technique and skills and methods of recreation leadership.
2 class hours. 1 2-hour laboratory period, by arrangement, credit, 3.
Professor GORE co-operating with the EXTENSION SERVICE and other Departments.

74. **II.** RECREATION ORGANIZATION AND ADMINISTRATION. — For seniors; juniors may elect. Administrative problems of community recreation programs, leisure surveys, supervision of recreational areas, park recreation, program making, and the lay-out and equipment of play facilities.
2 class hours. 1 2-hour laboratory period, by arrangement, credit, 3.
Professor GORE co-operating with the EXTENSION SERVICE and other Departments.

75. I. Health Education Theory and Practice. — For seniors. This course gives the teaching supervision, and administration of school health programs. It also gives first aid as applied in the home, on the street, and on the athletic field. Men who complete this course satisfactorily will receive American Red Cross First Aid Certificates.

1 class hour. 1 2-hour laboratory period, by arrangement, credit, 2.
Professors Radcliffe and Briggs.

77. I. Anatomy General. — For juniors. A course in structural human anatomy.

2 class hours. 1 2-hour laboratory period, credit, 3.
Dr. Radcliffe.

78. II. Anatomy Applied. — For juniors. A course aimed to give the anatomical application basal to a thorough understanding of the mechanical problems in apparatus, athletic and corrective exercises.

2 class hours. 1 2-hour laboratory period, credit, 3.
Dr. Radcliffe.

Physical Education for Women.

Mrs. Hicks, Miss Blatchford

Physical education is a very important part of each woman's education. It is the aim of the department to develop skills and appreciations which help to complete and enrich the life of the student. The organic power and neuromuscular skills, the emotional release and control gained by physical education provides the individual woman with ways of meeting life's situations.

Required Courses.

7. I. Recreation. — For freshmen. Outdoor season: archery, games, soccer, field hockey, special gymnastics; indoor season: badminton, basketball, clog, folk, and tap dancing (rhythmic dances), special gymnastics, swimming, volley ball, games.

2 2-hour laboratory periods, credit, 2.
Miss Blatchford.

8. II. Recreation. — For freshmen. Indoor season: badminton, basket-ball, clog, folk, and tap dancing, special gymnastics, indoor baseball, swimming, volley ball, games; outdoor season: archery, baseball, special gymnastics.

2 2-hour laboratory periods, credit, 2.
Miss Blatchford.

27. I. Recreation. — For sophomores. Outdoor season: archery, soccer, field hockey, special gymnastics; indoor season: badminton, basketball, dancing, special gymnastics, swimming.

2 2-hour laboratory periods, credit, 2.
Mrs. Hicks.

28. II. Recreation. — For sophomores. Indoor season: badminton, basketball, dancing, special gymnastics, indoor baseball, swimming; outdoor season: archery, baseball, special gymnastics.

2 2-hour laboratory periods, credit, 2.
Mrs. Hicks.

Elective Courses.

61. I. 62. II. Recreation. — For juniors. Outdoor season: sports and games depending upon the physical condition and needs of the students; indoor season: creative dancing.

2 1-hour laboratory periods, credit, 1.
Mrs. Hicks.

81. I. 82. II. Recreation. — For seniors. Outdoor season: sports and games for physical benefits and further development of skill and for social contacts; indoor season: creative dancing.

2 1-hour laboratory periods, credit, 1.
Mrs. Hicks.

Department of Military Science and Tactics.

Lieutenant Colonel Horace T. Aplington, Cav. (D. O. L.), U.S.A.; Major Leo B. Conner, Cav. (D. O. L.), U.S.A.; Captain Harold P. Stewart, Cav. (D.O.L.), U.S.A.; Technical Sergeant Jonathan Madden, U.S.A., Retired; Technical Sergeant James A. Warren, Cav. (D. E. M. L.), U.S.A.; Sergeant Frank Cronk, Cav. (D. E. M. L.), U.S.A.; Sergeant Roy Tanner, Cav. (D. E. M. L.), U.S.A., and a detachment of enlisted men of the United States Army.

Under act of Congress, July 2, 1862, the College was required to provide a two-year course in military instruction under a regular army officer. All able-bodied four-year male students are required to take this course. Under act of Congress, June 3, 1916, as amended by act of Congress, September 8, 1916, there was established at this college in April, 1917, an infantry unit of the Reserve Officers' Training Corps. Following the World War and an act of Congress, July 19, 1918, the Reserve Officers' Training Corps has been in operation under the regulation of the War Department, administered by the president of the college and the professor of military science and tactics. Beginning with the fall term, 1920–21, the infantry unit of the Reserve Officers' Training Corps was converted into a cavalry unit.

The primary object of the Reserve Officers' Training Corps is to provide systematic military training at civil educational institutions, for the ultimate purpose of qualifying selected students of such institutions as reserve officers in the military forces of the United States. It is intended to attain this object during the time the students are pursuing their general or professional studies, with the least practicable interference with their civil careers, by employing methods designed to fit men physically, mentally, and morally for pursuits of peace as well as war.

The course for cavalry units of the Reserve Officers' Training Corps includes theoretical and practical instruction in all phases of cavalry work, so distributed over the four-year college course as to qualify students at the end of the freshman year as privates of cavalry, at the end of the sophomore year as non-commissioned officers of cavalry, and upon graduation as reserve officers. The instruction in this department covers cavalry drill, cavalry weapons — rifle, pistol, machine rifle, and machine gun — map reading, minor tactics, equitation, etc. The course in equitation includes cross-country riding and jumping. Forty per cent of the course is classroom work. All practical instruction is out of doors.

All male candidates for a degree in the four-year course must take at least three hours a week of military training for two years. Students who are approved by the president and the professor of military science and tactics may take the advanced course in their junior and senior years if they so elect. The advanced course consists of at least five hours per week and a summer camp of about six weeks during the summer vacation between the junior and senior years. Students taking this course are paid by the Federal Government at a rate to be fixed by the Secretary of War, not to exceed the value of the army ration. The rate now is twenty-six cents per diem amounting for the two years to $140.40 to which should be added pay at camp of $27.93 making a cash value of $168.33. Students are required to equip themselves with riding boots but remainder of uniform is furnished by the college and becomes the property of the student upon graduation. Students graduating in the advanced course are eligible for commissions in the Officers' Reserve Corps, but are not required to accept such commissions if offered.

Uniforms for freshmen and sophomores are supplied by the college without cost except for shoes. A deposit of $18.00 is required to pay for shoes and insure return of other parts of uniform. The uniforms for the juniors and seniors (advanced course) are similar to U. S. army officers' uniforms tailor-made for the individual student. A deposit of thirty dollars for this uniform is required at the beginning of the junior year. The student is reimbursed through the allowances for clothing and rations.

Required Courses.

1. I. 2. II. For freshmen. Theoretical and practical instruction in courtesy and discipline, rifle marksmanship, hygiene and first aid, dismounted drill, and musketry.

3 scheduled hours, credit, 2.
Army Instructors.

25. **I.** 26. **II.** For sophomores. Theoretical and practical instruction in leadership, riding, drill, saber, machine rifle and pistol, and employment of cavalry.

3 scheduled hours, credit, 2.

ARMY INSTRUCTORS.

Elective Courses.

51. **I.** 52. **II.** For juniors. Cavalry drill and riding, selection and care of horses, pistol marksmanship, machine guns, map reading, map making, jumping, and employment of cavalry.

5 scheduled hours, credit, 3.

ARMY INSTRUCTORS.

75. **I.** 76. **II.** For seniors. Military law, history, correspondence and records, engineering (bridges and explosives), cavalry drill, leadership and command, riding, mounted sports, competitions, horse-show preparation and management, cross-country riding, and employment of cavalry.

5 scheduled hours, credit, 3.

ARMY INSTRUCTORS.

The Graduate School.

F. J. Sievers, *Director.*

Graduate courses leading to advanced degrees have been available at the college practically since its establishment. At the beginning these courses leading to the degrees of master of science and doctor of philosophy were confined almost entirely to the offerings in the field of science. Since then the work has expanded until now a major toward either degree may be selected in any of the following subjects:

Agricultural Economics and Farm Management
Agronomy
Bacteriology
Botany
Chemistry
Economics
Entomology
Food Technology
Pomology
Poultry Science
Sociology

The following departments offer major work toward a master of science degree only:

Animal Husbandry
Dairy Industry
Education
Floriculture
Home Economics
Horticulture Manufactures
Psychology

The degree of master of landscape architecture is granted to students completing the two years' graduate work offered by the department of landscape architecture; while students taking the equivalent of one year's graduate work in that major may be granted the degree of bachelor of landscape architecture.

Several other departments in the institution, while not regularly organized for major work in the graduate school, do, nevertheless, offer courses which may be selected for minor credit. These are:

English
French
Forestry
Geology
German
History
Mathematics
Philosophy
Physical Education
Physics
Physiology
Veterinary Science
Zoölogy

The general requirements of the graduate school regarding entrance, residence, credits, tuition, fees, etc., together with specific information concerning details of interest to prospective students are set down in a separate bulletin which may be obtained upon request to the Director's Office.

The Summer School.

For twenty-nine years the college has conducted a summer session, starting at first with a four-weeks' program consisting largely of teacher training and adult courses in nature study, vegetable gardening, fruit growing, poultry raising, and ornamental gardening, all organized without reference to credits or degree. Gradually the emphasis on such work changed and the need for more professional courses of college grade has resulted since 1924 in a six-weeks' session offering a well-balanced program of credit courses. These are arranged to assist (1) superintendents, principals, and teachers, connected with high or elementary schools who desire advanced instruction either with or without relation to academic credits; (2) classroom teachers who seek to prepare themselves more effectively in their special studies; (3) college undergraduates who wish to satisfy deficiencies or secure courses not otherwise available; and (4) any adult person who finds courses of special interest and aid for leisure or livelihood.

Fees and living expenses are very moderate so that many people arrange their vacation periods to include the summer session. A carefully planned program of entertainment including instruction in such sports as tennis, badminton, and archery, with hiking and picnics, swimming and golf, provides recreation for all.

Admission.

There are no formal examinations for admission to the summer school. Undergraduate students are admitted to such courses as their preparation justifies. Admission to the graduate school will be granted to graduates of the Massachusetts State College and to the graduates of other institutions having substantially equivalent requirements for the bachelor's degree.

The following courses were offered in the 1936 session and illustrate the type of program at present available.

* Indicates courses carrying graduate credit.

General Chemistry
Inorganic Chemistry
Community Recreation
*Current Economic Problems
Principles of Economics
*Child Psychology
*Classroom Management
*Mental Hygiene
*Philosophy of Education
*Psychology of Guidance
*Principles and Methods of Teaching
*Problems in Vocational Teaching
*Principles of Vocational Education
*American Prose
*Elizabethan Drama Prior to Shakespeare
*Modern British and American Poetry, 1900–1936
*Survey of American Poets, 1620–1900
*Food Preservation
*Fundamentals of Nutrition
*Genetics and Eugenics
*History of the United States, 1763–1860
*International Relations Since the World War
Mathematics of Finance
Practical Computation

For further information, write or apply to Roland H. Verbeck, Director of Short Courses, Massachusetts State College, Amherst, Mass.

For information concerning graduate work in the summer school, write or apply to Fred J. Sievers, Director of the Graduate School, Massachusetts State College, Amherst, Mass.

Non-Degree Courses of Instruction.

THE STOCKBRIDGE SCHOOL OF AGRICULTURE.

General Information.

The Stockbridge School of Agriculture was organized in 1918, under the name of "The Two-Year Course in Practical Agriculture," for the purpose of meeting the demand for a short course in agriculture which might be taken by students who could not satisfy college entrance requirements or who, for one reason or another, were unable to take the college course. In 1928 the school was given its present name in honor of Levi Stockbridge, first professor of agriculture in the College and its fifth president.

This course trains men and women for the practice of farming or associated agricultural industries. Graduation from it does not fulfill the requirements for entrance into the degree course nor are credits earned during the course transferable toward credit for a degree.

As the course is now organized, students may specialize in any one of eight vocations: animal husbandry, dairy manufactures, floriculture, horticulture, fruit growing, poultry husbandry, vegetable gardening or wildlife management. Specialization in a vocation does not prevent students from securing a general working knowledge of other subjects. The Stockbridge School will appeal not only to young men and women, but also to men and women of mature years and practical experience who wish to know more about the business of farming or associated agricultural industries. The School is not intended for students enrolled in a high school; such students should complete their high school course before seeking admission to this school.

Entrance Requirements.

Applicants for admission must be at least seventeen years of age and must have completed at least an elementary school course or its equivalent. Before being enrolled for the work of the second year, students must have completed six-months' practical experience approved by the supervisor of placement training.

Students who are already enrolled in high schools and who wish to enter this school before the completion of the high school course should bring a statement, either from the principal of the high school or from the parent or guardian, requesting enrollment.

Instruction.

The instruction is given by the regular faculty by means of classroom teaching, laboratory exercises, and practical work. The work of the classroom is supplemented by demonstration work in the laboratory, dairy room, greenhouse, and stables, and by a six months' period of farm placement training during the spring and summer following the second semester (eight weeks only) of resident instruction. The course is designed to offer plain, practical, direct information, and to establish the underlying reasons for, as well as methods employed in, the various operations.

Credit and Diploma.

In order to obtain a diploma, the student must complete satisfactorily all the work required in the vocational course which he has selected. This course consists of six months of class and laboratory work from October to April supplemented by six months of practical experience gained between the first and second years of resident instruction and subject to the approval of the supervisor of placement training.

No student failing to meet the requirements of his six months' summer training can be enrolled for the second year, since the placement training is an absolutely necessary prerequisite.

Graduates of county schools of agriculture or of agricultural departments of high schools may complete the course for a diploma in one year if they are recommended by the director of the county school or by the instructor in charge of the department of agriculture in the high school.

Special Catalog.

For a complete catalog of the Stockbridge School of Agriculture, containing an application blank, write or apply to Director Roland H. Verbeck, Massachusetts State College, Amherst, Mass.

THE WINTER SCHOOL.

Short Courses are based on the idea that the motive which inspires study is the most significant factor in study itself, and that this motive rises when the student himself realizes he faces a problem that calls for a solution. Therefore, there is no age limit. Enrolled in short courses are found the young and the old, the experienced and the inexperienced, the theoretical and the practical. In this grouping there is a value, since students learn from each other as well as from the instructors. Practically all Short Course students intend to make a direct application of the knowledge gained. Hence the aim of Short Course work is to offer the largest amount of information and training in agricultural and horticultural lines in the shortest possible time. During the past thirty years Short Courses have served hundreds of students in this Commonwealth, and the demand for these courses in recent years has steadily continued.

The Winter School has been established for a number of years at the college, and has proved to be very popular.

Instruction in the following courses will be offered this year:

(1) Nine Weeks' Course in Poultry Raising. November 16 to January 29.
(2) Ten Weeks' Course for Greenkeepers. January 4 to March 15.
(3) Ten Weeks' Practical and Scientific Course for Florists. Next offered in 1938.
(4) Two Weeks' Course in Dairy Bacteriology. January 4 to January 16.
(5) One Week Course in Milk and Cream Testing; Analyzing and Inspecting Milk Products. January 18 to January 23.
(6) One Week Course in Milk Plant Operation and Manufacture of Surplus Milk Products. January 25 to January 30.
(7) One Week Course in Ice Cream; Testing and Analyzing Ingredients Used in Ice Cream Making, the Standardizing of Mixes, and Freezing. February 1 to February 6.
(8) One Week Course in Ice Cream Making for Experienced Men. February 8 to February 13.
(9) Five-day Course for Tree Wardens and Town Foresters. March 22 to March 27.

During the one week the student devotes all of his time to the work of the special course in which he has enrolled. The instruction lasts throughout the day from 8 to 5. These courses meet a very definite need in the State for those who wish instruction, but who cannot attend for a longer period of time, and who do not wish to take other subjects.

Tuition and Fees.

	Tuition	*Registration*	*Health*
Greenkeepers' Course	$10.00	$5.00	$1.50
Practical and Scientific Course for Florists.	10.00	5.00	1.50
Poultry Course	9.00	5.00	1.50
Dairy Bacteriology Course	2.00	2.00	None
Dairy Courses, each	2.00	2.00	None
Tree Wardens' and Town Foresters' Course	2.00	2.00	None

THE FACULTY OF THE COLLEGE.

HUGH P. BAKER, D.Oec., LL.D., . . . South College—President's House
President.

The Resident Teaching Staff.

PROFESSORS EMERITUS.

WILLIAM P. BROOKS, Ph.D., D.Agr., ... 6 Farview Way
Professor of Agriculture, Emeritus.
HENRY T. FERNALD, Ph.D., . . 707 East Concord Ave., Orlando, Florida
Professor of Entomology, Emeritus.
JOSEPH B. LINDSEY, Ph.D., Sc.D., ... 47 Lincoln Ave.
Professor of Chemistry, Emeritus.
FRED W. MORSE, M.S., ... 40 Pleasant St.
Research Professor of Chemistry, Emeritus.
JOHN E. OSTRANDER, A.M., C.E., ... 33 North Prospect St.
Professor of Mathematics, Emeritus.
FRED C. SEARS, M.S., ... Mount Pleasant
Professor of Pomology, Emeritus.

GEORGE W. ALDERMAN, B.A., ... Physics Laboratory—Pelham
Assistant Professor of Physics.
CHARLES P. ALEXANDER, Ph.D., . . . Fernald Hall—Old Town Road
Professor of Entomology.
*CARROLLE E. ANDERSON, M.S., ... Clark Hall—Ashfield
Instructor in Botany.
HORACE T. APLINGTON, A.B., ... Drill Hall—55 Lincoln Ave.
Lieutenant-Colonel, Cavalry, U.S.A., Professor of Military Science and Tactics and Head of Department.
LORIN E. BALL, B.S., . . . Physical Education Building—3 Allen St.
Instructor in Physical Education.
LUTHER BANTA, B.S., ... Stockbridge Hall—7 Allen St.
Assistant Professor of Poultry Husbandry.
ROLLIN H. BARRETT, M.S., . . . Stockbridge Hall—45 East Pleasant St.
Assistant Professor of Farm Management.
ETHEL W. BLATCHFORD, B.S., ... Drill Hall—27 East Pleasant St.
Instructor in Physical Education.
LYLE L. BLUNDELL, B.S., ... Wilder Hall—5 Northampton Road
Professor of Horticulture.
HAROLD D. BOUTELLE, B.S., Ch.E., . Mathematics Building—29 Lincoln Ave.
Instructor in Mathematics.
LEON A. BRADLEY, Ph.D., . . . Marshall Laboratory—7 Cosby Ave.
Professor of Bacteriology.
LAWRENCE E. BRIGGS, B.S., . . Physical Education Building—3 Allen St.
Assistant Professor of Physical Education.
MILDRED BRIGGS, M.S., . . . Stockbridge Hall—East Pleasant St.
Assistant Professor of Home Economics.
THEODORE C. CALDWELL, Ph.D., ... Stockbridge Hall—West St.
Assistant Professor of History and Sociology.
ALEXANDER E. CANCE, Ph.D., ... South College—9 Fearing St.
Professor of Economics and Head of Department.
HAROLD W. CARY, A.M., ... Stockbridge Hall—R.F.D. 3
Instructor in History and Acting Head of Department of History and Sociology.
ELBERT F. CARAWAY, B.S.A., . . Physical Education Building—26 Main St.
Professor of Physical Education.

* On leave of absence.

JOSEPH S. CHAMBERLAIN, Ph.D., . Goessmann Laboratory—Mount Pleasant
Goessman Professor of Chemistry.

WALTER W. CHENOWETH, M.S., Horticultural Manufactures Lab.—North Amherst
Professor of Horticultural Manufactures and Head of Department.

ORTON L. CLARK, B.S., ... Clark Hall—12 College St.
Associate Professor of Botany.

LEO B. CONNER . . . . . Drill Hall—13 Taylor St.
Major, Cavalry, U.S.A., Assistant Professor of Military Science and Tactics.

Mrs. SARA M. COOLIDGE, M.S., . . . South College—The Homestead
Assistant Professor of Home Economics.

G. CHESTER CRAMPTON, Ph.D., ... Fernald Hall
Professor of Insect Morphology.

JAMES D. CURTIS, M.F., ... French Hall—9 Mount Pleasant
Instructor in Forestry.

FREDERICK MORSE CUTLER, Ph.D.,
Horticultural Manufactures Lab.—103 Butterfield Ter.
Assistant Professor of History and Sociology.

WILLIAM H. DAVIS, Ph.D., ... Clark Hall—12 Nutting Ave.
Assistant Professor of Botany.

LLEWELLYN L. DERBY . . Physical Education Building—81 Pleasant St.
Assistant Professor of Physical Education.

JOHN A. CLAGUE, Ph.D., . Horticultural Manufactures Lab.—15 Gray St.
Assistant Professor of Horticultural Manufactures.

LAWRENCE S. DICKINSON, M.S. . . . Stockbridge Hall—2 Farview Way
Assistant Professor of Agronomy.

WALTER S. EISENMENGER, Ph.D., . . . Stockbridge Hall—24 Dana St.
Research Professor of Agronomy and Head of Department.

FRED C. ELLERT, B.S., . . . Goessmann Laboratory—35 Blue Hills Road
Instructor in German.

JOHN N. EVERSON, M.S., ... Stockbridge Hall—North Amherst
Instructor in Agronomy.

RICHARD W. FESSENDEN, Ph.D., . Goessmann Laboratory—North Amherst
Assistant Professor of Inorganic Chemistry.

RICHARD C. FOLEY, M.S., ... Stockbridge Hall—The Campus
Assistant Professor of Animal Husbandry.

CHARLES F. FRAKER, Ph.D., ... The Chapel—3 Cosby Ave.
Assistant Professor of Modern Languages.

JULIUS H. FRANDSEN, M.S.A., . . . Flint Laboratory—35 Lincoln Ave.
Professor of Dairy Industry and Head of Department.

ARTHUR P. FRENCH, M.S., ... French Hall—North Amherst
Professor of Pomology and Plant Breeding.

WILHO FRIGARD, B.S., . . Physical Education Building—42 Lincoln Ave.
Instructor in Physical Education.

GEORGE E. GAGE, Ph.D., ... Marshall Laboratory—Lincoln Block
Professor of Bacteriology and Physiology and Head of Department.

PHILIP L. GAMBLE, Ph.D., ... South College—8 Lincoln Ave.
Assistant Professor of Economics.

MARY E. M. GARVEY, B.S., . Marshall Laboratory—29 South Prospect St.
Assistant Professor of Bacteriology.

GUY V. GLATFELTER, M.S., . . South College—29 Northampton Road
Assistant Professor of Animal Husbandry and Placement Officer.

HARRY N. GLICK, Ph.D., . . . Stockbridge Hall—6 North Hadley Road
Professor of Psychology.

STOWELL C. GODING, A.M., ... The Chapel—North Amherst
Assistant Professor of French and Music.

MAXWELL H. GOLDBERG, Ph.D., . . Stockbridge Hall—26 Lincoln Ave.
Assistant Professor of English.

CLARENCE E. GORDON, Ph.D., ... Fernald Hall—38 Lincoln Ave.
Professor of Zoölogy and Geology; Head of Department of Entomology, Zoölogy and Geology; Head of Division of Physical and Biological Sciences.

HAROLD M. GORE, B.S., . Physical Education Building—4 North Hadley Road
Professor of Physical Education and Head of Department of Physical Education for Men.

JOHN C. GRAHAM, B.S.Agr., . . . Stockbridge Hall—68 Lincoln Ave.
Professor of Poultry Husbandry and Head of Department.

CHRISTIAN I. GUNNESS, B.S., . . Stockbridge Hall—105 Butterfield Ter.
Professor of Agricultural Engineering and Head of Department.

MARGARET HAMLIN, B.A., ... South College—12 North East St.
Placement Officer for Women.

ARTHUR K. HARRISON . . . . . Wilder Hall—26 Fearing St.
Professor of Landscape Architecture.

VERNON P. HELMING, B.A., ... Stockbridge Hall—11 Gaylord St.
Instructor in English.

MRS. ADELINE E. HICKS, B.A., ... Drill Hall—43 Sunset Ave.
Physical Director for Women and Head of Department of Physical Education for Women.

CURRY S. HICKS, B.Pd., M.Ed., Physical Education Building—43 Sunset Ave.
Professor of Physical Education and Head of Division.

JAMES C. HILLIER, M.S., ... Stockbridge Hall—62 Pleasant St.
Instructor in Animal Husbandry.

WALTER H. HODGE, M.S., ... Clark Hall—5 Fearing St.
Instructor in Botany.

ROBERT P. HOLDSWORTH, M.F., ... French Hall—49 Amity St.
Professor of Forestry and Head of Department.

LEONTA G. HORRIGAN, B.S., ... Stockbridge Hall—18 Nutting Ave.
Instructor in English.

S. CHURCH HUBBARD . . . . . French Hall—North Amherst
Assistant Professor of Floriculture.

BENJAMIN ISGUR, M.S., ... Stockbridge Hall—Farview Way
Instructor in Agronomy.

FLORENCE S. JENNEY, M.D., ... The Infirmary
Assistant Professor of Hygiene for Women.

ARTHUR N. JULIAN, A.B., . . . Goessmann Laboratory—4 Farview Way
Professor of German.

SIDNEY W. KAUFFMAN, M.Ed., . Physical Education Building—Triangle St.
Instructor in Physical Education.

HELEN KNOWLTON, A.M., ... Flint Laboratory—12 North East St.
Associate Professor of Home Economics.

WILLIAM H. LACHMAN, M.S., ... French Hall—7 Nutting Ave.
Instructor in Olericulture.

MARSHALL O. LANPHEAR, M.S., ... South College—Farview Way
Assistant Dean and Assistant Professor in Charge of Freshman Orientation Course.

RUSSELL C. LARCOM, M.B.A., ... South College—Shays St.
Instructor in Economics.

JOHN B. LENTZ, A.B., V.M.D., . . . Paige Laboratory—3 Dana St.
Professor of Veterinary Science and Head of Department.

HARRY G. LINDQUIST, M.S., ... Flint Laboratory—17 Fearing St.
Vocational Instructor in Dairying.

ADRIAN H. LINDSEY, Ph.D., . . . Stockbridge Hall—Mount Pleasant
Professor of Agricultural Economics and Head of Department of Agricultural Economics and Farm Management.

C. COLLIS LYLE, Jr., M.A., . . . Goessmann Laboratory—27 Amity St.
Instructor in German.

KENNETH C. MACARTHUR, A.M., B.D. . . South College—33 Lincoln Ave.
Assistant Professor of Rural Sociology.

WILLIAM L. MACHMER, D.Ed., ... South College—25 Amity St.
Dean of the College, Professor and Acting Head of Department of Mathematics.

MERRILL J. MACK, M.S., ... Flint Laboratory—East Pleasant St.
Assistant Professor of Dairying.

*A. Anderson Mackimmie, A.M., . . . Stockbridge Hall—North Amherst
Professor of History and Sociology; Head of Department; Head of Division of Social Sciences.

Walter A. Maclinn, M.S. Horticultural Manufactures Lab.—Hatch Annex
Instructor in Horticultural Manufactures.

Miner J. Markuson, B.S. . . . . Stockbridge Hall—2 Cosby Ave.
Assistant Professor of Agricultural Engineering.

George A. Marston, M.S. . . . Mathematics Building—15 Gray St.
Instructor in Mathematics.

Walter M. Miller, Ph.D., ... South College—14 Kellogg Ave.
Assistant Professor of Mathematics.

Rudolph O. Monosmith, B.L.A., ... Wilder Hall—6 Phillips St.
Instructor in Horticulture.

Frank C. Moore, A.B., ... Mathematics Building—10 Allen St.
Associate Professor of Mathematics.

Miriam Morse, M.S. . . . . Fernald Hall—Draper Hall
Instructor in Zoölogy.

Claude C. Neet, Ph.D., ... Stockbridge Hall—67 Lincoln Ave.
Assistant Professor of Psychology.

John B. Newlon . . . . . Stockbridge Hall—North Amherst
Instructor in Agricultural Engineering.

A. Vincent Osmun, M.S., . . . Clark Hall—16 Northampton Road
Professor of Botany and Head of Department.

Ransom C. Packard, M.S., . . Marshall Laboratory—North Amherst
Vocational Instructor in Bacteriology.

*Ernest M. Parrott, M.S., . . Goessmann Laboratory—
Instructor in Chemistry.

Clarence H. Parsons, M.S., ... Stockbridge Hall—The Campus
Assistant Professor of Animal Husbandry and Superintendent of Farm.

Charles A. Peters, Ph.D., . . . Goessmann Laboratory—Sunset Place
Professor of Inorganic and Soil Chemistry.

Wallace F. Powers, Ph.D., . . . Physics Laboratory—10 Fearing St.
Professor of Physics and Head of Department.

Walter E. Prince, A.M., ... Stockbridge Hall—25 Amity St.
Professor of English.

Albert W. Purvis, Ed.M., . . . Stockbridge Hall—53 Lincoln Ave.
Instructor in Education.

George F. Pushee . . . . . Stockbridge Hall—North Amherst
Instructor in Agricultural Engineering.

Ernest J. Radcliffe, M.D., Physical Education Building—109 Butterfield Ter.
Professor of Hygiene and Head of Department of Student Health.

Nathan Rakieten, Ph.D. . . Marshall Laboratory—35 Blue Hills Road
Instructor in Physiology.

Frank Prentice Rand, A.M., . . Stockbridge Hall—3 Mount Pleasant
Professor of English; Head of Department of Languages and Literature; Acting Head of Division of Social Sciences.

Bryan C. Redmon, Ph.D., . . Goessmann Laboratory—6 Nutting Ave.
Instructor in Chemistry.

Victor A. Rice, M.Agr., . . . Stockbridge Hall—35 Woodside Ave.
Professor of Animal Husbandry; Head of Department; Head of Division of Agriculture.

J. Harry Rich, B.S., ... French Hall—10 South Prospect St.
Assistant Professor of Forestry.

Walter S. Ritchie, Ph.D., . . . Goessmann Laboratory—Mt. Pleasant
Professor of Chemistry and Head of Department.

Oliver C. Roberts, B.S., ... French Hall—10 Nutting Ave.
Assistant Professor of Pomology.

James Robertson, Jr., B.A., . Wilder Hall—20 Belmont Ave., Northampton
Instructor in Landscape Architecture.

Joseph R. Rogers, Jr., . . . Physical Education Building—13 High St.
Instructor in Physical Education.

* On leave of absence.

DONALD E. ROSS, B.S., ... French Hall—12 East Pleasant St.
Instructor in Floriculture and Greenhouse Foreman.

WILLIAM H. ROSS, Ph.D., ... Physics Laboratory—Thatcher Hall
Instructor in Physics.

WILLIAM C. SANCTUARY, M.S., ... Stockbridge Hall—5 Allen St.
Professor of Poultry Husbandry.

PAUL SEREX, Ph.D., ... Goessmann Laboratory—69 Lincoln Ave.
Associate Professor of Chemistry.

FRANK R. SHAW, Ph.D., ... Fernald Hall—North Pleasant St.
Instructor in Entomology and Beekeeping.

EDNA L. SKINNER, M.A., ... South College—30 Fearing St.
Professor of Home Economics; Head of Division; Adviser of Women.

HAROLD W. SMART, A.B., LL.B., . . . South College—115 Butterfield Ter.
Vocational Instructor in Farm Law, Business English and Public Speaking.

GRANT B. SNYDER, M.S., ... French Hall—North Amherst
Professor of Olericulture and Head of Department.

HAROLD P. STEWART . . . . . Drill Hall—Shays St.
Captain, Cavalry, U.S.A., Assistant Professor of Military Science and Tactics.

FRANK B. STRATTON, B.S., M.M., . . Memorial Hall—Mount Pleasant
Instructor in Music.

HARVEY L. SWEETMAN, Ph.D., ... Fernald Hall—Leverett St.
Assistant Professor of Entomology.

JOHN D. SWENSON, M.A., . . . Mathematics Building—35 Lincoln Ave.
Instructor in Mathematics.

WILLIAM H. TAGUE, B.S., ... Stockbridge Hall—45 Pleasant St.
Assistant Professor of Agricultural Engineering.

CHARLES H. THAYER . . . . . Stockbridge Hall—South East St.
Vocational Instructor in Agronomy.

CLARK L. THAYER, B.S., ... French Hall—2 Mount Pleasant
Professor of Floriculture and Head of Department.

RAY E. TORREY, Ph.D., ... Clark Hall—Inwood
Associate Professor of Botany.

REUBEN E. TRIPPENSEE, Ph.D., ... French Hall—4 Chestnut St.
Professor of Wildlife Management.

FREDERICK S. TROY, M.A., ... Stockbridge Hall—35 Blue Hills Road
Instructor in English.

ALDEN P. TUTTLE, M.S., ... French Hall—Birch Lawn
Instructor in Vegetable Gardening.

RALPH A. VAN METER, Ph.D., ... French Hall—North Amherst
Professor of Pomology; Head of Department; Head of Division of Horticulture.

JOHN H. VONDELL . . . . . Stockbridge Hall—24 Fearing St.
Instructor in Poultry Husbandry and Foreman Poultry Plant.

HERBERT E. WARFEL, M.S., ... Fernald Hall—North Amherst
Assistant Professor of Zoölogy.

FRANK A. WAUGH, D.Sc., L.H.D., ... Wilder Hall—The Campus
Professor of Landscape Architecture and Head of Department.

WINTHROP S. WELLES, M.Ed., . . . Stockbridge Hall—23 Lincoln Ave.
Professor of Education and Head of Department.

J. PAUL WILLIAMS, M.A., B.D., . . . Memorial Hall—North Amherst
Director of Religious Education.

GILBERT L. WOODSIDE, Ph.D., . . . Fernald Hall—5 Hitchcock St.
Assistant Professor of Biology.

OTHER OFFICERS.

WILLIAM H. ARMSTRONG, M.L.A.C.P., Grounds Service—13 North Prospect St.
Superintendent of Grounds.

HOWARD BIDWELL . . . . . Power Plant—Gill
Engineer.

ELEANOR F. BISHOP . . . . . South College—3 Spaulding St.
Principal Bookkeeper, Treasurer's Office.

Mrs. Mary L. Broughton . . . . . Abigail Adams House
House Mother.
Robert E. Buck, Ph.D. . . . . Goessmann Lab.—Hatch Annex
Laboratory Assistant in Chemistry.
John Calvi, B.S. . . . . Goessman Laboratory—101 Pleasant St.
Laboratory Assistant in Chemistry.
Frank T. Canavan . . . . . Flint Laboratory—102 Pleasant St.
Superintendent of Dairy Manufactures.
Alan W. Chadwick, B.S. . . . . Draper Hall
Manager of Dining Hall.
Affie M. Cook . . . . . South College—13 Phillips St.
Secretary to the President.
Aldis E. Flint . . . . . Marshall Laboratory—Pelham Road
Technical Assistant in Bacteriology.
Grace E. Gallond . . . . . South College—10½ Kellogg Ave.
Assistant to the Dean.
Hermon U. Goodell, B.S., ... Goodell Library—Pelham
Library Assistant.
Donald P. Hawley . . . . . North College—9 Phillips St.
Manager of College Store.
Mrs. Odna H. Hollis . . . . . The Infirmary
Matron.
Clarence A. Jewett . . . . . Power Plant—112 Pleasant St.
Superintendent of Buildings.
Edna Machon . . . . . The Infirmary
Resident Nurse.
Mrs. Lena C. Mory . . . . . Goodell Library—3 Kendrick Place
Library Assistant in Charge of Circulation.
Katherine Powell . . . . . Stockbridge Hall—116 Pleasant St.
Department Librarian.
Elizabeth B. Strachan . . . . . South College—17 High St.
Principal Bookkeeper, Treasurer's Office.
Marie J. vanWieren, B.S., ... Goodell Library—87 Pleasant St.
Library Assistant.
Bessie M. Weymouth . . . . . Goodell Library—Butterfield Ter.
Cataloguer.

Department Assistants.

Roland F. Becker, B.S., . . . Stockbridge Hall—29 North Prospect St.
Graduate Assistant, Department of Education.
John W. Bernotavicz, B.S., Horticultural Manufactures Lab.—86 Pleasant St.
Institutional Fellow, Department of Horticultural Manufactures.
Marguerite E. Bicknell, M.S., South College—104 South St., Northampton
Graduate Assistant, Department of Economics.
Amedeo Bondi, B.S., ... Marshall Laboratory—5 Fearing St.
Graduate Assistant, Department of Bacteriology and Physiology.
Louis Bush, B.S., ... Physical Education Building—Turners Falls
Institutional Fellow, Division of Physical Education.
Cornelius K. Cain, B.S., . . . Goessmann Laboratory—6 Nutting Ave.
Graduate Assistant, Department of Chemistry.
Chester E. Cross, B.S., ... Clark Hall
Graduate Assistant, Department of Botany.
Clyde W. Dow, B.L.I., ... The Chapel—53 Lincoln Ave.
Graduate Assistant, Department of Languages and Literature.
Carl S. Gerlach, B.S., ... Wilder Hall—54 Lincoln Ave.
Graduate Assistant, Department of Landscape Architecture.
Elizabeth W. Hager, B.S., ... Stockbridge Hall—South Deerfield
Graduate Assistant, Department of Home Economics.
Constance H. Hall, B.S., ... Stockbridge Hall—10 Chestnut St.
Graduate Assistant, Department of History and Sociology.
Calvin S. Hannum, B.S., ... South College—North College
Institutional Fellow, Department of Education.

Edward W. Harvey, B.S., . . . Marshall Laboratory—9 Spring St.
Graduate Assistant, Department of Bacteriology and Physiology.
Eleanor W. Healy, A.B., . . . Stockbridge Hall—Mt. Pleasant Inn
Graduate Assistant, Department of Languages and Literature.
Eunice M. Johnson, B.S., ... Clark Hall—7 East Pleasant St.
Institutional Fellow, Department of Botany.
James Kerr, Jr., B.S., ... Stockbridge Hall—34 Main St.
Institutional Fellow, Department of Languages and Literature.
Elfriede Klaucke, B.S., ... Stockbridge Hall—Eastman Lane
Graduate Assistant, Department of Agronomy.
Myron H. Kollen, A.B., . . Goessman Laboratory—68 Lincoln Ave.
Graduate Assistant, Department of Chemistry.
G. Harry Lewis, B.S., ... Goessman Laboratory—6 Nutting Ave.
Graduate Assistant, Department of Chemistry.
Robert E. Meyer, A.B., . . . Goessmann Laboratory—86 Pleasant St.
Institutional Fellow, Department of Chemistry.
Charles E. Meyers, B.S., ... Wilder Hall—6 Phillips St.
Graduate Assistant, Department of Landscape Architecture.
Carroll P. Moore, B.S., ... Stockbridge Hall—8 Kellogg Ave.
Graduate Assistant, Department of Education.
Alfred E. Newton, B.S., . . Goessmann Laboratory—81 Pleasant St.
Graduate Assistant, Department of Chemistry.
Katherine L. O'Brien, B.S., . . Nutrition Laboratory—18 Nutting Ave.
Graduate Assistant in Nutrition.
George R. Pease, B.S., . . Goessman Laboratory—13 East Pleasant St.
Institutional Fellow, Department of Chemistry.
Harry D. Pratt, B.S., ... Fernald Hall—10 Farview Way
Graduate Assistant, Department of Entomology.
Philip Robinson, B.S., ... Stockbridge Hall—14 Gray St.
Graduate Assistant, Department of Education.
Florence M. Saulnier, B.S., . Stockbridge Hall—7 East Pleasant St.
Institutional Fellow, Department of Languages and Literature.
Kevin Shea, B.A., ... Horticultural Manufactures Lab.
Institutional Fellow, Department of Horticultural Manufactures.
Nelson P. Stevens, B.S., ... Fernald Hall—84 Pleasant St.
Institutional Fellow, Department of Geology.
Max E. Turner, B.S., ... French Hall—7 Nutting Ave.
Graduate Assistant, Department of Pomology.

The Experiment Station Staff.

Fred J. Sievers, M.S., . . . Experiment Station Office—35 Fearing St.
Director.
John G. Archibald, M.S., . . Goessmann Laboratory—North Amherst
Assistant Research Professor of Animal Husbandry.
John S. Bailey, M.S., ... French Hall—North Amherst
Assistant Research Professor of Pomology.
William B. Becker, B.S., ... Fernald Hall—62 Pleasant St.
Research Assistant in Entomology.
Emmett Bennett, M.S., ... Goessmann Laboratory—96 Main St.
Research Assistant in Chemistry.
Arthur I. Bourne, B.A., . . . Fernald Hall—12 East Pleasant St.
Research Professor of Entomology.
Alfred A. Brown, M.S., ... Stockbridge Hall—24 Dana St.
Assistant Research Professor of Agricultural Economics and Farm Management.
William G. Colby, Ph.D., ... Stockbridge Hall—4 Chestnut St.
Research Professor of Agronomy.
Mrs. Gladys M. Cook, M.S., . . . Nutrition Laboratory—30 Lincoln Ave.
Research Assistant in Nutrition (Temporary).
Charles R. Creek, M.S.A., ... Stockbridge Hall—21 Main St.
Assistant Research Professor of Agricultural Economics and Farm Management.

PAUL W. DEMPSEY, B.S. . . . . Waltham Field Station—Waltham
Assistant Research Professor of Horticulture.
J. ELIZABETH DONLEY, M.S., ... Stockbridge Hall—4 Chestnut St.
Research Assistant in Agricultural Economics and Farm Management.
WILLIAM L. DORAN, M.S., ... Clark Hall—26 Lincoln Ave.
Research Professor of Botany.
WALTER S. EISENMENGER, Ph.D., ... Stockbridge Hall—24 Dana St.
Research Professor of Agronomy and Head of Department.
WILLIAM B. ESSELEN, Jr., M.S., ... Nutrition Laboratory
Research Assistant in Nutrition.
CARL R. FELLERS, Ph.D., . Horticultural Manufactures Lab.—16 Fearing St.
Research Professor of Horticultural Manufactures.
RALPH L. FRANCE, M.S., ... Marshall Laboratory—Mount Pleasant
Assistant Research Professor of Bacteriology.
HENRY J. FRANKLIN, Ph.D., ... Cranberry Station—East Wareham
Research Professor; Head of Cranberry Station.
MONROE E. FREEMAN, Ph.D., ... Goessmann Laboratory—12 Taylor St.
Research Professor of Chemistry.
JAMES E. FULLER, Ph.D., ... Marshall Laboratory—Farview Way
Assistant Research Professor of Bacteriology.
EDWIN F. GASKILL, B.S., . . Experiment Station Office—North Pleasant St.
Assistant to the Director.
GEORGE GRAVES, B.S., ... Waltham Field Station—Waltham
Assistant Research Professor of Nursery Culture.
EMIL F. GUBA, Ph.D., ... Waltham Field Station—Waltham
Assistant Research Professor of Botany.
CHRISTIAN I. GUNNESS, B.S., ... Stockbridge Hall—105 Butterfield Ter.
Meteorologist and Head of Department of Agricultural Engineering.
FRANK A. HAYS, Ph.D., ... Stockbridge Hall—Oneacre
Research Professor of Poultry Husbandry.
EDWARD B. HOLLAND, Ph.D., . Goessmann Laboratory—28 North Prospect St.
Research Professor of Chemistry.
CARLETON P. JONES, M.S., . . Goessmann Laboratory—8 Nutting Ave.
Assistant Research Professor of Chemistry
LINUS H. JONES, Ph.D., ... Clark Hall—1 Allen St.
Assistant Research Professor of Botany.
RAY M. KOON, M.S., ... Waltham Field Station—Waltham
Research Professor of Horticulture; Head of Waltham Field Station.
MALCOLM A. MCKENZIE, Ph.D., ... Clark Hall—North Amherst
Assistant Research Professor of Botany.
HELEN S. MITCHELL, Ph.D., . Experiment Station Office—30 Lincoln Ave.
Research Professor of Home Economics.
WILLIAM S. MUELLER, M.S., ... Flint Laboratory—13 Fearing St.
Assistant Research Professor of Dairying.
WALTER S. RITCHIE, Ph.D., ... Goessmann Laboratory—12 Taylor St.
Professor of Chemistry and Head of Department.
DAVID ROZMAN, Ph.D., ... South College—72 Main St.
Assistant Research Professor of Economics.
RUBY SANBORN, A.B., ... Stockbridge Hall—111 Butterfield Ter.
Research Assistant in Poultry Husbandry.
JACOB K. SHAW, Ph.D., ... French Hall—5 Farview Way
Research Professor of Pomology.
RUTH E. SHERBURNE, B.S., ... South College—Oneacre
Research Assistant in Economics.
HAROLD S. TIFFANY, A.B., ... Waltham Field Station—Waltham
Research Assistant in Nursery Culture.
WARREN D. WHITCOMB, B.S., ... Waltham Field Station—Waltham
Research Professor of Entomology.
HAROLD E. WHITE, M.S., ... Waltham Field Station—Waltham
Assistant Research Professor of Floriculture.
HRANT M. YEGIAN, B.S., ... Stockbridge Hall—Byways
Research Assistant in Agronomy.

Other Experiment Station Officers.

Robert E. Young, M.S., ... Waltham Field Station—Waltham
Assistant Research Professor of Vegetable Gardening.
Alyn S Ball . . . . . Clark Hall—94 Main St.
Laboratory Assistant in Botany.
Robert A. Caughey, B.S., . . . Goessmann Laboratory—95 Main St.
Research Fellow, Department of Chemistry.
Mrs. Lucia G. Church, . . Experiment Station Office—North Amherst
Secretary to the Director.
George C. Congdon, B.S., . . . Marshall Laboratory—20 Pleasant St.
Research Fellow, Department of Bacteriology and Physiology.
Domenic DeFelice, B.S., ... Horticultural Manufactures Lab.
Research Fellow, Department of Horticultural Manufactures.
Edward B. Donnelly . . . . . Waltham Field Station—Waltham
Technical Assistant in Floriculture.
Carl F. Dunker, B S., ... Horticultural Manufactures Lab.
Research Fellow, Department of Horticultural Manufactures.
F. Ethel Felton, B.S., . . Experiment Station Office—Mt. Pleasant Inn
Editorial Assistant.
William Garland . . . . . Waltham Field Station—Waltham
Laboratory Assistant in Entomology.
Constantine J. Gilgut, M.S., . . . Waltham Field Station—Waltham
Technical Assistant in Botany.
Myer Glickstein, B.S., ... Flint Laboratory—35 Lincoln Ave.
Research Fellow, Department of Dairy Industry
Mildred Goldfaden, B.A., . . . Nutrition Laboratory—Triangle St.
Research Fellow in Nutrition.
Mary C. Hughes, ... French Hall—Cottage St.
Laboratory Assistant in Pomology.
Joseph L. Kelley . . . . . Cranberry Station—East Wareham
Technical Assistant, Cranberry Station.
Karol J. Kucinski, B.S., . . . Stockbridge Hall—15 North East St.
Technical Assistant in Agronomy.
John W. Locke . . . . . Tillson Farm
Poultry Plant Foreman.
Oreana A. Merriam, M.S., . . Nutrition Laboratory—34 Lincoln Ave.
Laboratory Assistant in Home Economics.
Gladys I. Miner . . . . . Clark Hall—South Deerfield
Herbarium Curator.
Kenneth R. Newman, B.S., Horticultural Manufactures Lab.—90 Pleasant St.
Research Fellow, Department of Horticultural Manufactures.
Julius Novick, B.S., . Horticultural Manufactures Lab.—56 Pleasant St.
Research Fellow, Department of Horticultural Manufactures.
Leonard R. Parkinson . . . . . Nutrition Laboratory
Technical Assistant in Nutrition.
Daniel C. Plastridge, B.S., . . Stockbridge Hall—Alpha Sigma Phi House
Laboratory Assistant in Agricultural Economics and Farm Management.
Chester W. Smith, B.S., ... Stockbridge Hall—9 Fearing St.
Laboratory Assistant in Agricultural Economics and Farm Management.
Lawrence Southwick, B.S., ... French Hall—21 Pleasant St.
Technical Assistant in Pomology.
Harold A. Wilson . . . . . Waltham Field Station—Waltham
Foreman, Waltham Field Station.

Regulatory Service Staff.

Harry L. Allen . . . . . Regulatory Service—89 Main St.
Laboratory Assistant in Dairy, Feed and Fertilizer Control.
Kenneth L. Bullis, D.V.M., . . . Paige Laboratory—120 Pleasant St.
Assistant Veterinary Pathologist.
H. Robert DeRose, M.S., . . . Regulatory Service—Farview Way
Assistant Chemist.

OLIVER S. FLINT, B.S., ... Paige Laboratory—Cosby Ave.
Assistant Research Professor.
HENRI D. HASKINS, B.S., . . . Regulatory Service—3 East Pleasant St.
Chief of Laboratory, Fertilizer Control.
FREDERICK A. MCLAUGHLIN, B.S., . . Regulatory Service—4 Nutting Ave.
Assistant Research Professor, Seed Control.
PHILIP H. SMITH, M.S., ... Regulatory Service—102 Main St.
Chief of Laboratory, Feed Control.
HENRY VAN ROEKEL, D.V.M., Ph.D., . . Paige Laboratory—19 Hallock St.
Chief of Laboratory, Poultry Disease Control.
MIRIAM K. CLARKE, M.S., ... Paige Laboratory—87 Pleasant St.
Laboratory Assistant.
JAMES T. HOWARD . . . . Regulatory Service—North Pleasant St.
Inspector.
MRS. FELICIA JEWETT . . . . . Paige Laboratory—22 Gray St.
Laboratory Assistant.
JOHN W. KUZMESKI, B.S., ... Regulatory Service—Pelham Road
Junior Chemist.
ALBERT F. SPELMAN, B.S., . . Regulatory Service—35 East Pleasant St.
Junior Chemist.

EXTENSION SERVICE STAFF.

WILLARD A. MUNSON, B.S., . . . South College—101 Butterfield Ter.
Director.
ELLSWORTH W. BELL, M.S., ... Stockbridge Hall—11 Cottage St.
Extension Economist.[1]
BEATRICE E. BILLINGS, M.A., ... South College—Mt. Pleasant Inn
Home Demonstration Agent at Large.[1]
TENA BISHOP, B.S., ... South College—8 Triangle St.
Assistant State Club Leader.[2]
ORAN C. BOYD, Ph.D., ... Clark Hall—8 Hallock St.
Extension Plant Pathologist.[1]
MELBY W. BRADY, B.S., ... South College—R.F.D. 1, Springfield
Assistant State Club Leader.[2]
FAYETTE H. BRANCH, B.S., ... Stockbridge Hall—8 Dana St.
Extension Economist, Farm Management.[1]
JAMES W. BURKE, ... South College—23 Woodside Ave.
Extension Editor (Part Time).
EARLE S. CARPENTER, M.S., ... South College—McClure St.
Secretary of Extension Service.[2]
WILLIAM R. COLE, . . Horticultural Manufactures Lab.—33 Fearing St.
Extension Specialist, Horticultural Manufactures.[1]
ARNOLD M. DAVIS, B.S., ... French Hall—North Amherst
Assistant Extension Horticulturist.[2]
JAMES W. DAYTON, B.S., ... South College—North Amherst
Agricultural Agent at Large.[1]
RALPH W. DONALDSON, A.B., ... Stockbridge Hall—4 Dana St.
Extension Agronomist.
GEORGE L. FARLEY, M.S., ... South College—61 Amity St.
State Club Leader.[1]
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Extension Animal Husbandman.[1]
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Extension Nutritionist.[1]
MARION E. FORBES, B.S., ... South College—8 Triangle St.
Assistant State Club Leader.[2]
GRACE B. GERARD, B.S., ... South College—Mt. Pleasant Inn
Extension Specialist, Home Furnishing.[1]

[1] Ranks as Professor.
[2] Ranks as Assistant Professor.

WELLESLEY C. HARRINGTON, M.E., . . Stockbridge Hall—22 Sunset Ave.
Extension Agricultural Engineer.[1]
Mrs. HARRIET J. HAYNES, B.S., . . . South College—62 Pleasant St.
Extension Economist, Home Management.[1]
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State Home Demonstration Leader.[1]
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Extension Poultry Husbandman.[1]
HARLEY A. LELAND, B.S.Agr., ... South College—50 Sunset Ave.
Assistant State Club Leader.[2]
WILLIAM P. B. LOCKWOOD, M.S., ... 51 Cornhill, Boston
Extension Specialist in Dairying.[1]
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Extension Specialist in Community Organization and Recreation.[1]
H. RUTH McINTIRE, B.S., ... South College—27 Amity St.
Extension Specialist, Recreation.[1]
Mrs. RUTH D. MORLEY, M.A., . . . South College—Mount Pleasant
Extension Specialist, Child Development.[1]
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Extension Economist, Farm Management.[1]
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Extension Specialist, Clothing.[1]
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Extension Forester.[1]
WILBUR H. THIES, M.S., ... French Hall—North Amherst
Extension Horticulturist.[1]
GEORGE W. WESTCOTT, M.S., . . . Stockbridge Hall—Mount Pleasant
Extension Economist.[1]

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Catherine Cook, Assistant County Club Agent . . . . . Norfolk
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Mildred C. Thomas, County Home Demonstration Agent . . Worcester
Mrs. Helen D. Lane, Associate County Home Demonstration Agent Worcester
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Dorothy A. Crandall, B.S., Assistant County Club Agent . . Worcester
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Athletic Board: The Dean, Carpenter, Hawley, Munson.
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Commencement: Powers, Alexander, Blatchford, Clark, Doran, Emery, Hawley, Kenney.
Convention Committee: Carpenter, Armstrong, Chadwick, Curtis, Derby, Emery, Miller, Morse, Pray, Roberts.
Course of Study: The Dean, Alderman, M. Briggs, Caldwell, French, Goldberg, Gore, Lindsey, Mack.
Discipline: The Dean, Gore, Grayson, Gunness, Harrison, Hicks, Marston.
Exhibits: Robertson, A. M. Davis, Frigard, Ross, Shaw, Vondell.
Farm and Home Week: Carpenter, Frandsen, Graham, Gunness, Herr, Lindsey, Mitchell, Thayer, VanMeter.
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Game Management Study: McLaughlin, Banta, Fellers, Holdsworth, Rich, Trippensee, VanRoekel, Warfel.
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Music: Goding, Alderman, Fraker, Lyle, Stratton, Williams.
President's Cabinet: The President, Aplington, Gordon, Hawley, Hicks, Kenney, Machmer, Munson, Rand, Rice, Sievers, Skinner, VanMeter, Verbeck.
Publications: Sievers, Hawley, Munson, Oleson, Pray, Verbeck.
Recreation: VanMeter, L. Briggs, Dickinson, Gore, Grayson, Leland, McIntire, McLaughlin, Rich, Rogers, Stewart, Vondell.
Religious Advisory Council: The Dean, Fellers, French, Garvey, Goldberg, Hawley, Kenney, Knowlton, Larcom, Sievers, Verbeck, Williams.
Social Union: Rand, Dickinson, Ellert, Emery, Erickson, Goding, Helming, Monosmith, Stratton.
Stockbridge School Advisory Council: Verbeck, Banta, Barrett, Blundell, Foley, Hawley, Holdsworth, Hubbard, Lindquist, Markuson, Packard, Roberts, Smart, Snyder, Thayer.
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Student Life: Thayer, L. Briggs, M. Briggs, Fraker, Knowlton, Lanphear, Smart, Troy.
Summer School: Verbeck, Cole, Machmer, Rand, Rice, Sievers, Welles.

Students' Major Advisory Committees.

Agriculture: Rice, Eisenmenger, Frandsen, Gunness, Lindsey, Sanctuary.
Horticulture: VanMeter, Chenoweth, Harrison, Snyder, Thayer.
Home Economics: Skinner, M. Briggs, Coolidge, Knowlton.
Physical and Biological Sciences: Gordon, Alexander, Bradley, Gage, Lentz, Moore, Osmun, Powers.
Physical Education: Hicks, L. Briggs, Caraway, Derby, Gore, Radcliffe.
Social Sciences: Rand, Cance, Cary, Cutler, Glick, Welles.

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HAROLD L. FROST.
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[1] The President of the College and the Vice-President of the Board are ex-officio members of each committee.

DEGREES CONFERRED—1936

Doctor of Philosophy (Ph.D.)

Buck, Robert Edward, B.A., Cornell University, M.S., Massachusetts State College . . . . . Amherst
Williams, Inez Wilhelmena, B.S., M.S., Massachusetts State College . . Brockton

Master of Science (M.S.)

Andrews, Frederick N., B.S., Massachusetts State College . . . South Weymouth
Bean, Donald A., B.S., in Ch.E., Northeastern University . . . Newburyport
Bicknell, Marguerite E., B.A., Smith College . . . . . Amherst
Casey, Jeannette S., A.B., Vassar College . . . . . Holyoke
Clancy, Carl F., B.S., Massachusetts State College . . . . . Dedham
Cook, Gladys M., B.S., Battle Creek College . . . . . Brookville, Indiana
Cooney, Bernardine J., A.B., Smith College . . . . . Northampton
Dickinson, Lawrence S., B.S., Massachusetts State College . . . Amherst
Dwight, Alice I., B.S., Massachusetts State College . . . . Griswoldville
Everson, John N., B.S., Massachusetts State College . . . . Amherst
Flower, Ione K., A.B., Indiana University . . . . . Deerfield
Flynn, Alan F., B.S., Massachusetts State College . . . . . Sudbury
Frundt, Rudolph J. L., A.B., Hope College . . . . . Holland, Mich.
Gleason, Marion B., A.B., Smith College . . . . . Amherst
Hassett, James F., Ph.B., College of the Holy Cross . . . . Worcester
Hodge, Walter H., A.B., Clark University . . . . . Worcester
Jancik, Vladimir, Tng.Chem., Czechoslovakia Technical High School . Czechoslovakia
Knight, David J., B.S.A., North Carolina Agricultural College . . . Amherst
LaRose, Anna F., B.S.E., Westfield State Teachers College . . . Springfield
Levine, Arthur S., B.S., Massachusetts State College . . . . Brookline
Lucey, Alexander A., B.S., Massachusetts State College . . . . Medford
Merriam, Oreana A., B.S., University of Vermont . . . . . Amherst
Miller, Joseph, B.S., Massachusetts State College . . . . . Roxbury
Moseley, Louis H., B.S., Massachusetts State College . . . . Agawam
Murray, Robert V., Massachusetts State College . . . . . Holyoke
Novick, Julius, B.S., Massachusetts State College . . . . . Amherst
Numbers, Fred C., B.A., University of Rochester . . . . . Northampton
Pomerantz, Miriam, B.S.E., Westfield State Teachers College . . . Springfield
Riseman, Henry F., B.S., Massachusetts State College . . . . Winthrop
Robertson, William F., Massachusetts State College . . . . Framingham
Sharpe, Charles G., B.S., Massachusetts State College . . . . Westfield
Simpson, Gilbert, B.S., Massachusetts State College . . . . Amherst
Smith, Marion E., B.S., Massachusetts State College . . . . Amherst
Stanisiewski, Leon, B.S., Massachusetts State College . . . . Hadley
Stone, Philip C., B.S., Massachusetts State College . . . . . Athol

Bachelor of Landscape Architecture (B.L.A.)

Snow, Samuel P., B.S., Massachusetts State College . . . . Roxbury

Bachelor of Science (B.S.)

Adams, Ralph Terry . . . . . Athol
Allen, Elmer Howes . . . . . South Hadley
Allen, George Howard . . . . . Westboro
Allen, Roger Everett . . . . . Shrewsbury
Allis, Gertrude Helen . . . . . Conway
Anacki, Michael . . . . . West Suffield, Conn.
Andrus, Harriett Katherine . . . . . Springfield
Arenberg, Isaac Moses . . . . . Rochester
Arnold, Ralph Alexander . . . . . Franklin
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Baizman, Maurice Herman . . . . . Chelsea
Baker, Elizabeth Weston . . . . . Braintree
Balavich, Daniel Algerd . . . . . North Andover
Ballou, Donald Murch . . . . . Holyoke
Barrows, Randolph Corbin . . . . . Stafford Springs, Conn.
Barton, Jackson Arthur . . . . . Boston
Bearse, Carleton Everett . . . . . Sharon
Bernstein, Morris . . . . . Everett
Bertorelli, Ollie Leonard . . . . . Milford
Bilsky, Florence Selma . . . . . Springfield
Bishop, Gordon Harold . . . . . Athol
Bixby, Arthur Frederick . . . . . Sunderland
Bliss, William Roderic . . . . . Springfield
Bosworth, Clare Elizebeth . . . . . Holyoke
Boylan, Myles Gerald . . . . . Watertown
Bradley, Barbara Barker . . . . . Southfield
Bray, Robert Story . . . . . Gloucester
Brennan, Owen Joseph, Jr. . . . . Wheelwright
Bridges, Ella Mabel . . . . . South Deerfield
Briere, Arnold Charles . . . . . Holyoke
Britton, Elva Louise . . . . . Pittsfield
Brueckner, Alfred Herold . . . . . Springfield
Bruns, Helen Norris . . . . . Somerville
Bull, Frederick Kemmerer . . . . . Springfield
Bullard, Marian Elizabeth . . . . . North New Salem
Cance, Edmond Leland . . . . . Amherst
Cawley, Mary Alice . . . . . Winthrop
Chase, Madelin Damon . . . . . Winthrop
Chase, Milton Earle . . . . . Monument Beach

Chilson, William Wallace	Northampton
Clapp, James Wellington	Springfield
Clark, Robert Brown	Sharon
Clarke, James Roe	Milton, N. Y.
Congdon, Frederick Richard	Great Barrington
Cook, Philip Richard	Haydenville
Cooney, Mary Abbie	Interlaken
Corcoran, Mary Dorothy	Stoneham
Crabtree, Lois	Gardner
Cronin, Joseph Vincent	Haverhill
Crowe, Gerald David Garth	Schenectady, N. Y.
Czajkowski, Janina Mary	Amherst
Danaczko, John, Jr.	South Hadley
Davidson, James	Norwood
Davis, Barbara Jewell	Lexington
DeFelice, Domenic	Belmont
deWilde, Louis	Shiloh, N. J.
Dimock, Ralph Warren	Oxford
Donnelly, Donald Tracy	Chester
Dow, Hazel Marie	Haverhill
Driscoll, Frances Marie	Holyoke
Driscoll, Paul John	Northampton
Dunbar, Malcolm Ramsey	Barre
Dunker, Carl Frederick	Holyoke
Eaton, Alden Robinson	North Reading
Elder, Henry Holton	Mt. Hermon
Ferguson, Herbert William	Pittsfield
Fillmore, Eleanor Clarke	Melrose
Finkelstein, Carleton Jesse	Revere
Fisher, Allyn Hubbard	Norwood
Fiske, Franklin Howe	Greenfield
Fitzgerald, Patrick James	Haverhill
Flynn, Anna Agnes	Millers Falls
Flynn, John Hanlon	Palmer
Ford, Marguerite Marilyn	Brockton
Forer, Bertram Robin	Springfield
Foster, Jackson Walter	Winthrop
Franco, John Estrela	East Falmouth
Frye, Bradley Luther	Orange
Garbose, Dorothy	Gardner
Gardner, Alfred Hamilton, Jr.	Belmont
Gates, Chester Mason	Southbridge
Gillett, Lewis Chapman	Littleton
Gillette, Willard Raymor	North Billerica
Gingras, Irene Virginia	Blackinton
Glazier, Lynn Rodney	Leverett
Glick, Dean Newton	Amherst
Glickstein, Myer	Chelsea
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Goddard, William Leonard	Littleton
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Hixon, Adin Allyne	Worcester
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Kerr, James, Jr.	Adams
Kerr, Theodore William, Jr.	Medford
King, Priscilla	Melrose
Kingsbury, Harlan Wesley	Braintree
Kingston, Lucy Orcelia	Springfield
Kleyla, Mildred Elizabeth	South Deerfield
Klickstein, David	Malden
Koenig, Emil John, Jr.	Jefferson
Krasnoff, Joseph Harold	Roslindale
Krtil, Charles Lewis	Westfield
Lannon, Marjorie Louise	Holyoke
Laubenstein, Norvin Clement	Maynard
Lavin, Edward	Springfield
Law, Edward Victor	Belmont

LeDuc, Marguerite Rita	Ware
Lehr, Frederick Anthony	Springfield
Lesquier, Dolores Emma	Springfield
Levine, Lester Henry	Dorchester
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Lincoln, Madeline Hazel	Belchertown
Lincoln, Robert Bradley	Taunton
Lipovsky, Irving	Springfield
Logan, Robert Mellor	Lawrence
Lord, Francis Alfred	Northampton
Lord, Thomas Henry	Arlington
Lothrop, Cummings Lincoln, III	Springfield
Low, Elizabeth	Arlington
Lubach, Helen	Mattapan
Macintosh, Phyllis Garry	North Dana
Malloch, Ronald Carnegie	Greenfield
Mallory, Evelyn Marie	Amherst
Marsh, Charles William	Feeding Hills
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Moran, Charles Henry	East Boston
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Newman, William Joseph MacKenzie	Florida
Nietupski, Peter Andrew	Three Rivers
Norwood, Terrance Shanahan	Greenfield
Noyes, Lorraine Fisherdick	Glen Rock, N. J.
Nurmi, Dorothy	Westminster
O'Brien, Katherine Louise	Amherst
Packard, Clarence Adelbert	Amherst
Parker, Howard Clarence	Bondsville
Parsons, Edith Mildred	Turners Falls
Paulding, Marion Louise	South Hanson
Pearlmutter, David Berstein	Revere
Peckham, Richard Tufts	West Medford
Peterson, Lester Carl	Quincy
Pineo, Clare Linwood	Mt. Tom
Plastridge, Daniel Clayton	Bedford
Pratt, Harry Davis	North Adams
Proctor, Bessie Louise	Lunenburg
Proctor, Raymond Norris	Lunenburg
Putnam, Arthur Allan	Wilbraham
Putnam, Oliver Ripley	Danvers
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Raleigh, Walter Dalton	West Springfield
Reardon, Helen Marie	Amesbury
Reed, Ruth Vassall	Waltham
Richards, Albert Peter	Amherst
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Rose, William Arthur	Winthrop
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Sawyer, Helen Louise	Littleton
Shulkin, Arnold Samuel	Revere
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Smith, Gladys Virginia	Westfield
Soulliere, Edward Joseph	Worcester
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Thayer, Charles Vallentine	Amherst
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Thompson, Wallace Wetherell	Worcester
Tikofski, Adolph Edward	Walpole
Trask, Owen Smith	Lexington
Valentine, James Alden, Jr.	South Walpole
Vassos, George Arthur, Jr.	Springfield
Vickery, Gertrude Mabel	Greenfield
Wainio, Walter	Maynard
Warner, Roger Lewis	Williamsburg
Wentworth, Frances	Pittsfield
Whaley, William Gordon	East Moriches, N. Y.
Whitaker, Spofford	West Medford
Whitney, Marjorie Eleanor	Westminster
Willard, Luther Lincoln	Worcester
Winsor, Sylvia Bancroft	New Bedford
Wolcott, Thomas Bernard	Westfield

Wood, John Langille	Greenfield
Worden, Betsy	West Springfield
Zak, John Michael	Sunderland
Ziomek, Apolonia Julia	Amherst

BACHELOR OF VOCATIONAL AGRICULTURE (B.V.A.)

Snow, Raymond Milton, Jr.	Lawrence
Sturtevant, Jack	Lynnfield Center

REGISTRATION, 1936-37.

GRADUATE STUDENTS.

Superior figures indicate: [1] Enrolled during academic year, 1935–1936.
[2] Enrolled in Summer School, 1936.
[3] Enrolled during first semester, 1936–37

Aho, Olaf W.[2] Education . . . . . Ashburnham
B.S.E., Fitchburg State Teachers College
Allen, Elmer H.[3] Floriculture . . . . . South Hadley
B.S., Massachusetts State College
Andrews, Frederick N.[1] Animal Husbandry . . . . . South Weymouth
B.S., M.S., Massachusetts State College
Amberlock, Joseph P.[1] Economics . . . . . Westfield
B.S., Northeastern University
Atkins, Marjorie.[2] English . . . . . Amherst
A.B., Wheaton College.
Babcock, Chester I., Jr.[3] Chemistry . . . . . Newtonville
B.S., Massachusetts State College.
Barton, Dorothy L.[2] English . . . . . Waterbury, Conn.
A.B., Mount Holyoke College.
Bean, Donald A.[1] Horticultural Manufactures . . . . . Newburyport
B.S. in Ch.E., Northeastern University.
M.S., Massachusetts State College.
Becker, Roland F.[1 3] Psychology . . . . . Methuen
B.S., Massachusetts State College.
Becker, William B.[1 3] Entomology . . . . . Amherst
B.S., New York State College of Forestry.
Bell, Vernon A.[3] Entomology . . . . . Amherst
B.S., Massachusetts State College.
Belsky, Abraham H.[3] Chemistry . . . . . Holyoke
B.A., Dartmouth College.
Bernique, George M.[1] Education . . . . . New Bedford
B.A., Assumption College.
Bernotavicz, John W.[3] Horticultural Manufactures . . . . . Brockton
B.S., Providence College.
Bicknell, Marguerite E.[1 3] Economics . . . . . Amherst
B.A., Smith College.
M.S., Massachusetts State College.
Bondi, Amedeo.[1 2] Bacteriology . . . . . Springfield
B.S., Connecticut State College.
Bourgeois, Florence.[3] . . . . . Williamsburg
B.A., Smith College.
M.A., Columbia University.
Bourgeois, Marguerite M.[3] Botany . . . . . Boston
B.S., Massachusetts State College.
Boyden, Grace L.[3] Education . . . . . Amherst
B.S.E., Worcester State Teachers College.
Brackley, Floyd E.[2] Education . . . . . Belchertown
B.S., Massachusetts State College.
Bresnick, Samuel.[1] Chemistry . . . . . Revere
B.S., Massachusetts State College.
Broudy, Herman.[1 3] Entomology . . . . . Amherst
B.S., Pennsylvania State College.
M.S., Massachusetts State College.
Brown, Alfred A.[3] Agricultural Economics . . . . . Amherst
B.S., M.S., Massachusetts State College.
Buck, Robert E.[1] Chemistry . . . . . Amherst
B.A., Cornell University.
M.S., Ph.D., Massachusetts State College.
Bullard, Lawrence.[1] Education . . . . . North Dartmouth
B.S., Massachusetts State College.
Burke, Edward J.[3] Education . . . . . Hatfield
B.S., Massachusetts State College.
Bush, Louis J.[3] Education . . . . . Turners Falls
B.S., Massachusetts State College.
Cain, Cornelius K.[1 3] Chemistry . . . . . Owensboro, Ky.
B.S., University of Kentucky.
Calvi, John.[1 3] Chemistry . . . . . Athol
B.S., M.S., Massachusetts State College.
Cannon, Milton W.[2 3] Education . . . . . Chicopee
B.A., University of Ottawa.
Cary, Marjorie E.[1] Agricultural Economics . . . . . Lyonsville
B.S., Massachusetts State College.
Casey, Jeannette S.[1] Education . . . . . Boston
A.B., Vassar College.
M.S., Massachusetts State College.
Caughy, Robert A.[1 3] Chemistry . . . . . Antrim, N. H.
B.S., University of New Hampshire.
Cawley, Mary A.[3] Chemistry . . . . . Winthrop, Mass.
B.S., Massachusetts State College.
Chesley, Ruth.[3] English . . . . . Gardner
A.B., Bates, College.
Clancy, Carl F.[1] Bacteriology . . . . . Dedham
B.S., M.S., Massachusetts State College.
Clancy, William J.[1 2 3] Education . . . . . Springfield
A.B, Rochester University.

Clapp, Roger F.[1] Rural Sociology . . . . . Amherst
B.S., Massachusetts State College.
Congdon, George.[1 3] Bacteriology . . . . . Millis
B.S., Massachusetts State College.
Connery, Ellen R.[3] Agricultural Economics . . . . . Easthampton
B.S., Massachusetts State College.
Connor, Daniel J.[2] Education . . . . . South Hadley Falls
A.B., College of the Holy Cross.
Conroy, James A.[1 3] Education . . . . . Pittsfield
B.S., Georgetown University.
Cook, Gladys M.[1] Home Economics . . . . . Amherst
B.S., Battle Creek College.
M.S., Massachusetts State College.
Cooney, Bernardine F.[1] Education . . . . . Northampton
A.B., Smith College.
M.S., Massachusetts State College.
Coughlin, Thomas F.[1 2 3] Education . . . . . Lee
C.E., Rensselaer Polytechnic Institute.
Crane, Francis J.[3] Education . . . . . Chicopee
B.A., University of Ottawa.
Creek, Charles R.[1] Agricultural Economics . . . . . Amherst
B.S.A., M.S.A. Purdue University.
Crooks, G. Chapman.[1] Chemistry . . . . . Amherst
A.B., Amherst College.
M.S., Massachusetts State College.
Cross, Chester E.[1 3] Botany . . . . . Onset
B.S., Massachusetts State College.
Cummings, Guy A.[1] Education . . . . . Ware
B.S., Worcester Polytechnic Institute.
Currie, Eugene K.[1 3] Education . . . . . Ashfield
A.B., Colby College.
Curtis, Lavada.[1 3] Horticultural Manufactures . . . . . Auburn, Ala.
B.S., University of Alabama.
Czajkowski, Janina M.[2] Home Economics . . . . . Amherst
B.S., Massachusetts State College.
Daniels, Charles H.[1] Entomology . . . . . Melrose
B.S., Massachusetts State College.
Davis, Arnold M.[1 2 3] Landscape Architecture . . . . . North Amherst
B.S., Massachusetts State College.
Deady, Robert L.[2] Education . . . . . Chicopee Falls
B.S.E., Fitchburg State Teachers College.
DeAngelus, Angelo F.[3] Psychology . . . . . Dalton
B.S., Roanoke College.
D'Ercole, Augustino D.[3] Horticultural Manufactures . . . . . Springfield
B.A., University of Ottawa.
DeFelice, Domenic.[3] Horticultural Manufactures . . . . . Belmont
B.S., Massachusetts State College.
Dennis, Gordon B.[3] Economics . . . . . Easthampton
B.S., Massachusetts State College.
DeRose, H. R.[1 3] Agronomy . . . . . Amherst
B.S., M.S., Kansas State College.
DiCarlo, Louis M.[3] Psychology . . . . . Northampton
B.A., Union College.
Dickinson, Lawrence S.[1] Agronomy . . . . . Amherst
B.S., M.S., Massachusetts State College.
Dobeneck, von, Henning Freiherr.[1] Agronomy . . . . . Munich, Germany
Technische Hochschule, Munchen.
Donley, J. Elizabeth.[1] Agricultural Economics . . . . . Amherst
A.B., Mount Holyoke College.
M.S., Massachusetts State College.
Doran, Dorothy.[1] Home Economics . . . . . Springfield
B.S., Massachusetts State College.
Dow, Clyde W.[1 3] Education . . . . . Wakefield
B.L.I., Emerson College of Oratory.
Drummond, Robert L.[2] Education . . . . . Cambridge
B.S., Massachusetts School of Art.
Dunker, Carl F.[2 3] Horticultural Manufactures . . . . . Holyoke
B.S., Massachusetts State College.
Dwight, Alice I.[1] Botany . . . . . Griswoldville
B.S., M.S., Massachusetts State College.
Edmond, Stuart.[1] Entomology . . . . . Amherst
B.S., M.S., Massachusetts State College.
Elder, Holton.[1] Agricultural Economics . . . . . Amherst
B.S. Massachusetts State College.
Ely, Philip L.[3] Education . . . . . Northampton
B.A., Colby College.
Elvove, Joseph T.[3] . . . . . College Park, Md.
B.S., M.A., University of Maryland.
Emerson, Emery A.[3] Chemistry . . . . . Dalton
B.S., Middlebury College.
Esselen, William B., Jr.[1 3] Bacteriology . . . . . Millis
B.S., M.S., Massachusetts State College.
Everson, John N.[1] Agronomy . . . . . Amherst
B.S., M.S., Massachusetts State College.
Fitzgerald, Dorothy E.[2] English . . . . . Belchertown
B.A., College of St. Rose.
Flower, Ione K.[1] Education . . . . . Deerfield
A.B., Indiana University.
M.S., Massachusetts State College.
Flynn, Alan F.[1] Education . . . . . Sudbury
B.S., M.S., Massachusetts State College.

Flynn, Anna A.[3] Education . . . . . Millers Falls
B.S., Massachusetts State College.
Flynn, Charles B.[1] Education . . . . . Yonkers, N. Y.
B.S., Manhattan College.
Flynn, James H.[1] Dairy Industry . . . . . Easthampton
B.S., Massachusetts State College.
Foley, Daniel J.[1] Horticulture . . . . . Salem
B.S., Massachusetts State College.
Foran, John W.[2] . . . . . Northampton
A.B., College of the Holy Cross.
A.M., Boston College.
Foth, Charles E.[1] Education . . . . . Amherst
B.A., M.A., Amherst College.
Fraser, Carl A.[1 2] Animal Husbandry . . . . . Amherst
B.S., Massachusetts State College.
Frellick, Arthur.[1] Education . . . . . West Bridgewater
B.S., Massachusetts State College.
Frellick, Ralph.[1] Education . . . . . West Bridgewater
B.S., Massachusetts State College.
French, Chester L.[1] Chemistry . . . . . Greenfield
B.S., Massachusetts State College.
Frigard, Wilho.[3] Education . . . . . Maynard
B.S., Massachusetts State College.
Frundt, Rudolph J. L.[1] Chemistry . . . . . Holland, Mich.
A.B., Hope College.
M.S., Massachusetts State College.
Gagliarducci, Vincent.[2] English . . . . . Springfield
B.S., Massachusetts State College.
Gerlach, Carl S.[1 3] Landscape Architecture . . . . . East Detroit, Mich.
B.S., Michigan State College.
Gilbertson, Howard S.[3] Landscape Architecture . . . . . East Foxboro
A.B., Harvard University.
Gleason, Marian B.[1] Education . . . . . Amherst
A.B., Smith College.
M.S., Massachusetts State College.
Glick, Dean N.[3] Landscape Architecture . . . . . Amherst
B.S., Massachusetts State College.
Glickstein, Myer.[3] Dairy Industry . . . . . Chelsea
B.S., Massachusetts State College.
Goderre, Cleo R.[3] Education . . . . . Gardner
B.S., University of Alabama.
Goldfaden, Mildred.[1 3] Home Economics . . . . . New London, Conn.
B.A., Connecticut College for Women.
Golub, Barnett L.[1] Education . . . . . East Longmeadow
B.S., Massachusetts State College.
Goodell, Bertram.[1] . . . . . West Pelham
B.S., Massachusetts State College.
Goodell, Herbert A.[1] . . . . . West Pelham
B.S., Massachusetts State College.
Goodell, Herman U.[3] . . . . . West Pelham
B.S., Massachusetts State College.
Goodell, Irene A.[1 3] Botany . . . . . West Pelham
B.S., Massachusetts State College.
Gouck, Harry K.[3] Entomology . . . . . Andover
B.S., University of New Hampshire.
Gowdey, Mary K.[3] . . . . . Amherst
B.S., Sargent School Physical Education.
Granger, Ralph H.[1] . . . . . Hathorne
B.S., Massachusetts State College.
Grayson, Herbert.[1] Education . . . . . Holden
B.S., Massachusetts State College.
Gund, Henry, Jr.[1] . . . . . LaCrosse, Wis.
A.B., Cornell University.
Hager, Elizabeth W.[3] Home Economics . . . . . South Deerfield
B.S., Massachusetts State College.
Hall, Constance H.[3] History & Sociology . . . . . Sharon
B.S., Massachusetts State College.
Hannum, Calvin S.[3] Psychology . . . . . Pittsfield
B.S., Massachusetts State College.
Hanson, Reuben T.[1] Floriculture . . . . . St. Paul, Minn.
B.S., University of Minnesota.
Hartt, Margaret B.[3] Education . . . . . Springfield
B.S.E., Westfield State Teachers College.
Harvey, Edward I.[1 3] Bacteriology . . . . . Amherst
B.S., Massachusetts State College.
Haskins, Dorothy I.[2] Education . . . . . Greenfield
A.B., Mount Holyoke College.
Hassett, J. Frank.[1] Education . . . . . Worcester
Ph.B., College of the Holy Cross.
M.S., Massachusetts State College.
Hatch, Miriam.[1] Education . . . . . North Amherst
B.S., Sargent College.
Hawley, Helen M.[2] Education . . . . . Holyoke
B.S.E., Salem State Teachers College.
Healy, Eleanor W.[3] Education . . . . . Edgewood, R. I.
A.B., Mount Holyoke College.
Healy, Mrs. Winston.[1] . . . . . Shelburne Falls
A.B., Smith College.
Healy, Winston.[1] . . . . . East Charlemont
A.B., Williams College.
Hebard, William E.[2] Education . . . . . Northampton
B.A., University of Maine.

Higgins, Ernest R.[3] Bacteriology . . . . . Bar Harbor, Me.
B.S., Rhode Island College of Pharmacy.
Hillberg, Pauline.[1] Education . . . . . Amherst
B.S., Massachusetts State College.
Hodge, Walter H.[1 3] Education . . . . . Amherst
A.B., Clark University.
M.S., Massachusetts State College.
Holway, Richard T.[1 3] Entomology . . . . . South Duxbury
A.B., Dartmouth College.
M.S., Massachusetts State College.
Hopkins, Louise A.[2 3] Education . . . . . Northampton
B.A., Wells College.
Hubbard, Catherine N.[1] Education . . . . . Sunderland
B.S., Massachusetts State College.
Hubbard, Richard W.[2 3] Education . . . . . Sunderland
B.S., Massachusetts State College.
Hunt, James F.[3] . . . . . Northampton
B.S., University of Pennsylvania.
M.S., Massachusetts State College.
Isgur, Benjamin.[1 3] Agronomy . . . . . Amherst
B.S., M.S., Massachusetts State College.
Jancik, Vladimir.[1] Horticultural Manufactures . . . . . Czechoslovakia
Tng., Chem., Czechoslovakia Technical High School.
M.S., Massachusetts State College.
Jenness, Raymond.[1] Education . . . . . Huntington
B.S.E., Bridgewater State Teachers College.
Johnson, Eunice M.[1 2] Botany . . . . . Amherst
B.S., Massachusetts State College.
Josko, Margaret M.[3] Psychology . . . . . Springfield
B.S.E., Westfield State Teachers College.
Karlson, Gustaf A., Education . . . . . Worcester
B.S., Massachusetts State College.
Keefe, Katherine G.[2] History . . . . . Hadley
B.A., College of New Rochelle.
Kerr, James, Jr.[3] Education . . . . . Adams
B.S., Massachusetts State College.
Keiler, Emil E.[1] Education . . . . . Easthampton
B.S.E., Fitchburg State Teachers College.
Kennedy, James J.[3] . . . . . Holyoke
A.B., College of the Holy Cross.
M.A., Columbia University.
Klaucke, Elfriede.[1 3] Agronomy . . . . . Worcester
B.S., Massachusetts State College.
Klein, Isaac.[1] Education . . . . . Springfield
B.S., College of the City of New York.
Knight, David J.[1] Dairy Industry . . . . . Amherst
B.S.A., North Carolina Agricultural College.
M.S., Massachusetts State College.
Koch, Albert F.[2] Education . . . . . Turners Falls
B.A., Dartmouth College.
Kollen, Myron H.[3] Chemistry . . . . . Holland, Mich.
A.B., Hope College.
Kopp, Richard C.[3] Education . . . . . Northampton
B.A., American International College.
Krtil, Charles L.[3] Landscape Architecture . . . . . Westfield
B.S., Massachusetts State College.
Kucinski, Karol.[1 2] Agronomy . . . . . Amherst
B.S., Massachusetts State College.
Kulash, Walter M.[3] Entomology . . . . . Haydenville
B.S., Massachusetts State College.
Landis, Albert B.[3] Poultry Science . . . . . Amherst
B.S., Massachusetts State College.
LaRose, Anna F.[1] Education . . . . . Springfield
B.S.E., Westfield State Teachers College.
M.S., Massachusetts State College.
Levine, Arthur S.[1 3] Horticultural Manufactures . . . . . Brookline
B.S., M.S., Massachusetts State College.
Levine, Lester H.[3] Education . . . . . Dorchester
B.S., Massachusetts State College.
Lewis, Gothie H.[3] Chemistry . . . . . Hazelton, Pa.
B.S., Pennsylvania State College.
Lind, Melva [1] . . . . . Northampton
B.A., University of Minnesota.
Lohan, Francis M.[1] Education . . . . . Springfield
A.B., St. Michaels College.
M.S., Massachusetts State College.
Love, Andrew W.[1] Education . . . . . Auburn
B.S., Massachusetts State College.
Lucey, Alexander A.[1] Econ. Hist. and Soc. . . . . Medford
B.S., M.S., Massachusetts State College.
Lyle, C. Collis, Jr.[1 3] . . . . . Ventnor City, N. J.
B.A., M.A., Cornell University.
Lynch, Harold E.[1 3] Education . . . . . Pittsfield
A.B., Clark University.
Lynch, Melvin A.[3] Education . . . . . Springfield
B.S.E., Fitchburg State Teachers College.
Lyons, Mary E.[2 3] . . . . . Holyoke
B.S., Framingham State Teachers College.
M.A., Columbia University.
Maclinn, Walter A.[1] Horticultural Manufactures . . . . . Amherst
B.S., M.S., Massachusetts State College.

Margolin, Oscar.[1 3] Dairy Industry . . . . . Newtonville
B.S., Massachusetts State College.
Martin, Edward J.[1 2] Education . . . . . Hudson
B.S., Massachusetts State College.
Masters, Dorothy L.[2] Home Economics . . . . . Stockbridge
B.S., Massachusetts State College.
Matthias, Virginia P.[2] . . . . . South Hadley
B.A., M.A., Mount Holyoke College.
McAndrews, Walter F.[1] Education . . . . . Hartford, Conn.
B.S.E., Fitchburg State Teachers College.
McClintoch, Helen J.[2] Education . . . . . Melrose
B.S.E., Framingham State Teachers College.
McKelligott, Mary M.[2] Education . . . . . Palmer
A.B., Trinity College.
McQueston, Dorothy E.[2] . . . . . Hadley
A.B., Brown University.
Merriam, Oreana A.[1] Horticultural Manufactures . . . . . Amherst
B.S., University of Vermont.
M.S., Massachusetts State College.
Merrill, George L.[1] Education . . . . . Ware
Institute of Musical Art of the Juillard School of Music.
Merritt, Lucius A.[2] Education . . . . . Williamsburg
B.S., Trinity College.
Merritt, Richard H.[1] Education . . . . . Canaan, N. Y.
B.S., Massachusetts State College.
Meyer, Edward.[2 3] Education . . . . . Springfield
B.L.I., Emerson College of Oratory.
Meyer, Robert S.[3] Chemistry . . . . . Springfield
A.B., Clark University.
Meyers, Charles E.[1 3] Landscape Architecture . . . . . Delta, Colo.
B.S., Colorado State College.
Miller, Donald R.[1] Education . . . . . Northampton
A.B., Bucknell University.
Miller, Joseph.[1] Horticultural Manufactures . . . . . Roxbury
B.S., M.S., Massachusetts State College.
Mills, Ernest M.[1] Horticultural Manufactures . . . . . Amherst
B.S., Cornell University.
Monosmith, Rudolph O.[1 3] Landscape Architecture . . . . . Amherst
B.S., Mississippi A. and M. College.
B.L.A., Massachusetts State College.
Moore, Carroll P.[1 3] Education . . . . . Somers, Conn.
B.S., Connecticut State College.
Moran, John F.[1] Education . . . . . Pittsfield
B.S.E., Fitchburg State Teachers College.
Moriarty, Robert E.[2] Education . . . . . Monson
B.S., Massachusetts State College.
Morse, Miriam.[1 3] Entomology . . . . . Amherst
B.S., St. Lawrence University.
M.S., Massachusetts State College.
Moseley, Louis J.[1] Education . . . . . Agawam
B.S., M.S., Massachusetts State College.
Motroni, Ralph J.[2] . . . . . Holyoke
A.B., Williams College.
A.M., Brown University.
Mountain, David C.[1] Bacteriology . . . . . Pittsfield
B.S., Massachusetts State College.
Mueller, William S. Chemistry . . . . . Amherst
B.S., University of Illinois.
M.S., University of New Jersey.
Muir, Gilbert.[3] Education . . . . . Shelburne Falls
B.S., Colby College.
Murphy, Gertrude E.[2] Education . . . . . Palmer
B.A., Brown University.
Murray, Robert V.[1] Horticultural Manufactures . . . . . Holyoke
B.S., M.S., Massachusetts State College.
Nagel, Dorothea M.[3] Education . . . . . Northampton
B.S.E., Salem State Teachers College.
Nash, Edmond.[1] Landscape Architecture . . . . . Greenfield
B.S., Massachusetts State College.
Nettleton, George E.[3] Entomology . . . . . West Haven, Conn.
B.S., Connecticut State College.
Neuman, Samuel.[3] Education . . . . . Dorchester
B.S., Massachusetts State College.
Newman, Kenneth R.[2 3] Horticultural Manufactures . . . . . Hoosac Tunnel
B.S., Massachusetts State College.
Newton, Alfred E.[1 3] Chemistry . . . . . Sharon
B.S., Massachusetts State College.
Novick, Julius.[1 3] Horticultural Manufactures . . . . . Amherst
B.S., M.S., Massachusetts State College.
Numbers, Fred C., Jr.[1] Education . . . . . Northampton
B.A., University of Rochester.
M.S., Massachusetts State College.
O'Brien, Allan F.[1] Education . . . . . Northampton
B.S., Massachusetts State College.
O'Brien, M. Josephine.[2] Education . . . . . Lee
A.B., College of New Rochelle.
O'Brien, Katherine L.[3] Home Economics . . . . . Amherst
B.S., Massachusetts State College.
O'Donnell, Katharine M.[2 3] Education . . . . . Holyoke
B.S.E., Fitchburg State Teachers College.
O'Keefe, Katherine M.[2] Education . . . . . Fitchburg
B.S.E., Framingham State Teachers College.

Oliver, Charles F.[1] Education . . . . . Dartmouth
B.S., Massachusetts State College.
O'Rourke, Ralph W.[3] Education . . . . . Springfield
B.S.E., Fitchburg State Teachers College.
Parent, Leslie M.[1] Economics . . . . . Westfield
A.B., College of the Holy Cross.
Parrott, Ernest M.[1] Chemistry . . . . . North Amherst
B.S., Union University.
M.S., Massachusetts State College.
Pease, George R.[1 3] Chemistry . . . . . Amherst
B.S., Massachusetts State College.
Pelissier, Raymond.[1] Agricultural Economics . . . . . Hadley
B.S., Massachusetts State College.
Perry, Marion L.[2] Education . . . . . North Adams
B.S.E., Salem State Teachers College.
Perry, Mildred G.[2] Education . . . . . Lowell
B.S.E., Fitchburg State Teachers College.
Pierce, Dorothy.[2] Education . . . . . Holden
B.S.E., Worcester State Teachers College.
Plastridge, Daniel C.[3] Agricultural Economics . . . . . Bedford
B.S., Massachusetts State College.
Pomerantz, Miriam.[1] Education . . . . . Springfield
B.S.E., Westfield State Teachers College.
M.S., Massachusetts State College.
Ponte, Edward P.[1 3] Psychology . . . . . Springfield
B.S.E., Fitchburg State Teachers College.
Porter, Wayland R.[2] Education . . . . . Amherst
B.C., Carnegie Institute of Technology.
Potter, Rial S.[1] Chemistry . . . . . Springfield
B.S., Massachusetts State College.
Pratt, Harry D.[3] Entomology . . . . . North Adams
B.S., Massachusetts State College.
Pray, Francis C.[1 3] Sociology . . . . . Amherst
B.S., M.S., Massachusetts State College.
Pushee, Ruth.[1] Education . . . . . North Amherst
B.S., Massachusetts State College.
Renfro, Henry M.[3] Landscape Architecture . . . . . Opelika, Ala.
B.S., Alabama Polytechnic Institute.
Reum, Alice H.[2] Education . . . . . Turners Falls
B.S.E., Framingham State Teachers College.
Richardson, Arthur C.[3] Poultry Husbandry . . . . . Boston
B.S., North Carolina Agricultural College.
Riseman, Henry F.[1] Poultry Husbandry . . . . . Winthrop
B.S., M.S., Massachusetts State College.
Robertson, William F.[1] Horticultural Manufactures . . . . . Milford
B.S., M.S., Massachusetts State College.
Robinson, Phillip.[1 2] Education . . . . . Chelsea
B.S., Massachusetts State College.
Roney, Jeanette M.[2] Education . . . . . Huntington
B.A., University of Maine.
Ross, Charles F.[1] Education . . . . . Auburn
B.S., Massachusetts State College.
Saulnier, Florence M.[3] Education . . . . . Worcester
B.S., Massachusetts State College.
Savaria, Thomas J.[1] Dairy Industry . . . . . Ware
B.S., Massachusetts State College.
Scott, Ruth E.[2 3] Education . . . . . North Hadley
B.S., Massachusetts State College.
Seass, Stewart.[3] . . . . . North Amherst
B.A., Williams College.
M.A., Amherst College.
Sharpe, Charles G.[1] Education . . . . . Westfield
B.S., M.S., Massachusetts State College.
Shea, Kevin G.[3] Horticultural Manufactures . . . . . Chicopee Falls
B.A., Ottawa University.
Simpson, Gilbert.[1] Economics . . . . . Amherst
B.S., M.S., Massachusetts State College.
Smart, Harold W.[1] Sociology . . . . . Amherst
A.B., Amherst College.
Smith, Chester W.[3] Agricultural Economics . . . . . Fairfield, Maine
B.S., University of Maine.
Smith, Marion E.[1] Entomology . . . . . Amherst
B.S., M.S., Massachusetts State College.
Smith, Olive.[1 2 3] Education . . . . . Springfield
B.S.E., Bridgewater State Teachers College.
Smith, William T.[1] Agricultural Economics . . . . . West Springfield
B.S., Massachusetts State College.
Snow, Samuel P.[1] Landscape Architecture . . . . . Arlington
B.S., M.S., Massachusetts State College.
Southwick, Lawrence.[1 3] Pomology . . . . . Amherst
B.S., Massachusetts State College.
Sorton, Edgar.[1] Education . . . . . Holyoke
B.S., Massachusetts State College.
Spruijt, Frederik L.[3] Entomology . . . . . South Amherst
Agricultural College of Amsterdam
M.S., University of California.
Stanisiewski, Leon.[1] Education . . . . . Hadley
B.S., M.S., Massachusetts State College.
St. Clair, Lillian E.[3] Education . . . . . Palmer
B.S.E., Westfield State Teachers College.
Stearns, Carleton N.[2] Education . . . . . Danvers
B.S., Massachusetts State College.

Stelle, R. Moore.[3] Education . . . . . Northampton
A.B., Illinois University.
Stevens, Nelson P.[1 3] Chemistry . . . . . Haverhill
B.S., Massachusetts State College.
Stevens, Robert F.[3] Floriculture . . . . . Medfield
B.S., University of New Hampshire.
Stiles, Stuart P.[3] Chemistry . . . . . Amherst
B.A., Wesleyan University.
Stone, Philip C.[1 3] Entomology . . . . . Athol
B.S., M.S., Massachusetts State College.
Stout, Ralph A.[2] History . . . . . Longmeadow
B.P.E., Springfield College.
Studer, Albert R.[1] Education . . . . . Greenfield
B.S.E., Fitchburg State Teachers College.
Tatoian, Harry E.[1] Education . . . . . Thompsonville, Conn.
B.A., Colgate University.
Tetro, Robert C.[1 3] Agricultural Economics . . . . . Williamsburg
B.S., Massachusetts State College.
Thomas, Howard H.[3] Education . . . . . Suffield
B.S., Massachusetts State College.
Tomlinson, William E.[3] Entomology . . . . . West Newton
B.S., Tufts College
Torno, William H.[1 3] Education . . . . . Holyoke
B.S.E., Fitchburg State Teachers College.
Trowt, Eleanor.[3] . . . . . Amherst
B.S., Simmons College.
Tufts, William H.[1] Education . . . . . North Eastern
B.S., Michigan State College.
Turner, Max E.[3] Pomology . . . . . Augusta, Maine
B.S., University of Maine.
Vitagliano, Guy R.[3] Bacteriology . . . . . Concord, N. H.
B.S., University of New Hampshire.
Warner, Roger L.[3] Education . . . . . Williamsburg
B.S., Massachusetts State College.
Waterman, Jennie A.[2] History . . . . . Gorham, Maine
B.A., University of Maine.
Watson, Vernon K.[1] Bacteriology . . . . . Amherst
B.S., M.S., Massachusetts State College.
Willard, Luther L.[1] Entomology . . . . . Worcester
B.S., Massachusetts State College.
Williams, Inez.[1] Entomology . . . . . Brockton
B.S., M.S., Ph.D., Massachusetts State College.
Wood, Gwendolyn S.[1] Bacteriology . . . . . El Monte, California
B.A., University of California.
Worthington, James M.[1 3] . . . . . Amherst
B.A., Williams College.
M.A., Columbia University.

Summary Graduate Students

	Men	Women	Total
Enrolled during academic year, 1935–36	124	29	153
Enrolled in Summer School, 1936	27	26	53
Enrolled during first semester, 1936–37	105	29	134
Total excluding duplications	204	71	275

Undergraduate Students

Class of 1937

Aiken, Ralph Emerson, Jr.	Georgetown	Phi Sigma Kappa
Appel, Charles	Holyoke	42 Brookline Ave., Holyoke
Appel, John	Holyoke	42 Brookline Ave., Holyoke
Ash, Rose Jane	Holyoke	44 Pleasant Street
Baggs, Barbara Edwards	Belchertown	30 North Prospect Street
Ballard, Dorothy	Gilbertville	Adams House
Barnes, Lois Brewster	Florence	Sigma Beta Chi
Barr, Isadore	Springfield	Alpha Epsilon Pi
Basamania, Alfred Walter	Holyoke	24 Beston Street
Benea, Charles	North Plymouth	Alpha Sigma Phi
Berman, Nathan Milton	Mattapan	North College
Bernstein, Edwin George	Springfield	Phi Lambda Tau
Berry, Franklyn Doane	Dennis Port	Alpha Sigma Phi
Bevington, Alice Barlow	Lawrence	Adams House
Bieber, Robert Anthony	Hatfield	Stockbridge Hall
Birdsall, Ernest Leslie	Lawrence	31 Fearing Street
Birnie, Catherine Martha	Ludlow	Sigma Beta Chi
Blackmer, Leroy Lewis, Jr.	North Brookfield	Kappa Sigma
Blassberg, Ruth	Turners Falls	Draper Hall
Bobula, Paul Frederick	West Roxbury	42 Lincoln Avenue
Bohm, Richard Oscar	East Milton	Phi Sigma Kappa
Bolton, Horace Winfield	East Northfield	Kappa Sigma
Bongiolatti, Louis	Adams	Sigma Phi Epsilon
Boucher, Mary Elizabeth	Easthampton	Sigma Beta Chi
Boyden, Alma Ruth	Boylston	Phi Zeta
Bradford, Priscilla Marie	North Raynham	Sigma Beta Chi
Breault, Louis Adelard, Jr.	Auburn	Lambda Chi Alpha

Breinig, Mary Rebecca	Northfield	Phi Zeta
Brooks, John Poor	Holliston	53 Lincoln Avenue
Brouillet, Lucille Constance	Springfield	13 Fearing Street
Brown, Dorothy Imogene	Feeding Hills	Sigma Beta Chi
Bruneau, Alfred Washburn	North Plymouth	Alpha Sigma Phi
Butler, Malcolm Suffolk	Saugus	Sigma Phi Epsilon
Butterfield, Norman Wesley	Pittsfield	42 Lincoln Avenue
Byrnes, John Joseph	Pittsfield	19 Fearing Street
Cain, Marjorie Grant	Conway	Phi Zeta
Cain, Muriel Elizabeth	Conway	Phi Zeta
Calkins, Margaret	Harvard	Adams House
Chandler, Webster Allen	Melrose	Mt. Pleasant Inn
Clark, Barbara May	Dodge	Alpha Lambda Mu
Clark, Barbara Ruth	Ashfield	Adams House
Clark, Leroy French	Walpole	Q. T. V.
Cohen, Melvin Irving	Roxbury	Care of Wentworth, East Pleasant Street
Conner, Virginia Justine	Westfield	Adams House
Conway, Raymond Francis	Holyoke	20 Pleasant Street
Cosmos, Louis Elias	Springfield	Amherst Fire Station
Couhig, Robert Emmet	Beverly	Q. T. V.
Craft, Clayton Chester	Ashfield	Q. T. V.
Crowley, Leo Vincent	Amherst	83 Main Street
Cushman, Francis Elliott	Kingston	Alpha Sigma Phi
Cutter, James Frederick	West Hatfield	Kappa Sigma
Davis, Ernest Kirk	Lee	97 Pleasant Street
Davis, Frederick Leroy	Portland, Maine	Kappa Epsilon
Desmond, Richard Clancy	East Lynn	North College
Dihlmann, Henry George	Shutesbury	North Amherst
Dobby, James	Winthrop	Alpha Epsilon Pi
Dodge, Elizabeth Louise	Ashland	Adams House
Domenici, Trento Joseph	Holyoke	Sigma Phi Epsilon
Donnelly, Dorothea Margaret	Chester	The Homestead
Downing, Helen Anna	Holyoke	24 Fearing Street
Driscoll, Howard Bernard	Holyoke	Q. T. V.
Dunphy, Esther Mae	South Hadley Falls	24 Fearing Street
Entin, Moses Jacob	Boston	Phi Lambda Tau
Esbach, Charles Edgar	Winchester	Alpha Gamma Rho
Fargo, Alburn Lasell	Monterey	7 Allen Street
Ferrell, Edson John	North Agawam	47 Bridge Street, Agawam
Ferrucci, Anthony Patrick, Jr.	Milford	10 Nutting Avenue
Filios, Angela Mary	Westfield	The Homestead
Fisher, Austin Wellington, Jr.	Auburndale	Theta Chi
Flavin, Edward Michael	Greenfield	86 Pleasant Street
Freedman, Joseph	Holyoke	286 Linden Street, Holyoke
Friedman, Hillel Henry	Roxbury	East Pleasant Street
Fun, Lois Isabelle	Holyoke	492 High Street, Holyoke
Gale, Shirley	Marblehead	Adams House
Gates, Ralph Bailey	Barre, Vt.	Kappa Sigma
George, Murray Winter	Wrentham	Alpha Gamma Rho
Gleason, Phyllis Ann	Springfield	Adams House
Goldsmith, Sylvia Shirley	Springfield	Adams House
Goodhue, Frederick Wells	Haydenville	84 Pleasant Street
Gordon, Barbara Ramona	West Springfield	8 Allen Street
Goulding, Estella Caroline	Leicester	19 Phillips Street
Grant, Norman Wallace	Lynn	Kappa Sigma
Graves, Russell Thompson	Northampton	97 Pleasant Street
Gray, Guy Manning, Jr.	Greenfield	Theta Chi
Gricius, Albert Joseph	Dorchester	French Hall
Gulben, Sandra	Worcester	Alpha Lambda Mu
Guralnick, Walter Charles	Roxbury	Alpha Epsilon Pi
Hallowell, Elmer Winston	Greenfield	Sigma Phi Epsilon
Hanson, John Francis	Medford	16 North Prospect Street
Hardy, Erving Douglas	Worcester	Kappa Sigma
Harris, Lawrence Keith	Swampscott	26 Fearing Street
Hart, Raymond Lewis	Lynn	53 Lincoln Avenue
Hartin, Forrest Dana	Maynard	Colonial Inn
Healey, Emily Madeline	Easthampton	Care of Carpenter, McClure Street
Higgins, Kenneth Raymond	Fall River	Lambda Chi Alpha
Hobart, Merrill Spinney	Needham	4 Sunset Court
Hodder, Walter James	Belmont	4 Sunset Court
Holdsworth, Robert Powell	Amherst	49 Amity Street
Hopkins, Sarah Huntington	Orleans	Draper Hall
Howard, Harlan Arnold	Amherst	200 North Pleasant Street
Iacovelli, Henry Nicholas	Milford	Q. T. V.
Ingalls, Allan Southworth	Methuen	Kappa Sigma
Irvine, Kenneth Colwell	Worcester	Theta Chi
Jackson, Edith Lillian	Middleboro	Lambda Delta Mu
Johnson, Byron Taylor	Danbury, Conn.	Theta Chi
Johnson, Lawrence Sterling	Springfield	Alpha Sigma Phi
Johnson, William Vialle	Kendal Green	Theta Chi
Jordan, Raymond Benedict	Revere	Phi Sigma Kappa
Joyce, Dorothy Mary	Amesbury	The Homestead
Kabat, John	Hatfield	Alpha Sigma Phi
Keck, Barbara Knox	Boylston	Adams House
Kennedy, Joseph George	Brighton	Q. T. V.
Kewer, William Frank	Dorchester	Phi Sigma Kappa
Kinsman, Ruth	Roxbury	Sigma Beta Chi
Klibanoff, Samuel	Springfield	Phi Lambda Tau
Knowlton, Richard Berry	Malden	Kappa Epsilon

Koch, Harry Fredrick	Greenfield	Sigma Phi Epsilon
Kuc, Rudolph William	Holyoke	84 Pleasant Street
Kushlan, Henry Shoub	Amherst	23 Cottage Street
Kyle, Laurence Harwood	Huntington	97 Pleasant Street
Landers, John Edward	Holyoke	Q. T. V.
Lannon, Dorothy Elizabeth	Holyoke	8 Allen Street
Lapham, Wendell Edward	Carlisle	Lambda Chi Alpha
Layton, Philip Dumaresq	West Newton	Theta Chi
Leighton, William Ames, Jr.	Auburndale	Theta Chi
Lerner, Morris	Springfield	31 Fearing Street
Lewis, Walter Fredric[1]	Andover	West Experiment Station
Liberfarb, Sidney	Mattapan	2 Allen Street
Lilly, Max	Malden	Care of Wentworth, East Pleasant Street
Lipman, Leo David	Springfield	Phi Lambda Tau
Ludwin, Isadore	Malden	63 East Pleasant Street
Machmer, Katharine Louise	Amherst	25 Amity Street
Maguire, Thomas Joseph	Haverhill	72 Lincoln Avenue
Marciniak, Emil	Easthampton	19 Fearing Street
McMahon, Helena Clare	Brighton	Phi Zeta
McMahon, Thomas Francis	Brighton	66 Lincoln Avenue
McNally, Edmund James	Palmer	36 Park Street, Palmer
McNally, John Edmund	Palmer	Stockbridge Hall
Meyers, Charles Harold	Greenfield	North College
Milne, George McLean	Lexington	Kappa Epsilon
Minott, Ivan Charles, Jr.	West Deerfield	West Deerfield
Minzner, Raymond Arthur	Lawrence	35 Lincoln Avenue
Monroe, Lucille Amelia	Southbridge	Sigma Beta Chi
Moody, Gordon	Amherst	30 Sunset Avenue
Moseley, Walter Banjamin	Agawam	Lambda Chi Alpha
Moss, William Henry	Fairhaven	Kappa Epsilon
Munson, Willard Squier	Amherst	101 Butterfield Terrace
Newcomb, Elliott Houghton	Orange	Kappa Epsilon
Nogelo, Anthony Joseph	Framingham	3 McClellan Street
Nowakowski, Joseph Conrad	Easthampton	31 Franklin Street, Easthampton
O'Brien, George Edward	Northampton	148 Crescent Street, Northhampton
Okolo, Nellie Mary	Amherst	Care of Goding, North Amherst
Osborne, Lemuel, Jr.	Tenafly, N. J.	Old Town Road
Peckham, Robert Bishop	Medford	42 McClellan Street
Perriello, Robert Charles	Dorchester	72 Lincoln Avenue
Peterson, David Allen	Methuen	19 Fearing Street
Pickering, James Aaron	Boston	84 Pleasant Street
Planting, Alfred Herbert	Amherst	16 North East Street
Pratt, Roger Kingman, Jr.	Brockton	31 Fearing Street
Priest, Edith Evelyn	Maynard	Sigma Beta Chi
Provost, Rita Agnes	North Agawam	83 Walnut Street, North Agawam
Raynes, William Augustus, Jr.	Hyde Park	29 Lincoln Avenue
Rice, Lee Wilson, Jr.	Wilbraham	Phi Sigma Kappa
Richards, Prescott Langdon	Florence	44 Maple Street, Florence
Richason, George Robert	Turners Falls	6 Nutting Avenue
Roberts, Louis Everett	Lexington	Phi Sigma Kappa
Rogers, Caroline Rita	Medway	Phi Zeta
Rosberry, Paul Hubbard	Erving	97 Pleasant Street
Ross, Kenwood	Springfield	Lambda Chi Alpha
Rossiter, David Patrick, Jr.	Malden	French Hall
Ruffley, John, Jr.	New Bedford	97 Pleasant Street
Ryan, James Marcus	Needham Heights	67 Lincoln Avenue
Ryer, Robert, III	South Hadley	1 Bridgman Lane, South Hadley
Sampson, Henry James	North Westport	Alpha Sigma Phi
SanClemente, Charles Leonard	Milford	10 Nutting Avenue
Sawinski, Gizela Caroline	Taunton	Sigma Beta Chi
Seperski, Stanley Francis	East Pepperell	Q. T. V.
Sheffield, Norman Louis	Enfield	Kappa Sigma
Shiff, Philip Burrell	Duxbury	Care of Wentworth, East Pleasant Street
Silverman, Milton	Malden	63 East Pleasant Street
Simonsen, Walter	Everett	Theta Chi
Sleeper, Harold Anthony	South Groveland	63 East Pleasant Street
Small, Saul	Springfield	33 Allendale St., Springfield
Smith, Esther Elizabeth	Easthampton	Lambda Delta Mu
Spear, Philip James	Charlemont	Fernald Hall
Spiller, Robert LeRoy, Jr.	Beverly	Phi Sigma Kappa
Stepath, Frances Elizabeth	Springfield	19 Phillips Street
Stone, Elinor Leola	Orange	Sigma Beta Chi
Swan, Edward Parsons, Jr.	Amherst	4 Hallock Street
Swanson, Carl Pontius	Rockport	French Hall
Symancyk, Clifford Ernest	Westfield	Kappa Sigma
Talinski, John Joseph	Roxbury	67 Lincoln Avenue
Thacker, Edward Jesse	Winthrop	Kappa Sigma
Thomas, Albert Stetson	Brattleboro, Vt.	26 Fearing Street
Thomas, Francis Joseph	Turners Falls	6 Nutting Avenue
Thorndike, Robert William	Lawrence	Phi Sigma Kappa
Thurlow, Donald Ferderick	Greenfield	Apiary
Todt, Ruth Elizabeth	West Springfield	Sigma Beta Chi
Trombly, Everett Lowe	Indian Orchard	3 Hampden Street, Indian Orchard

[1] Candidate for Bachelor of Vocational Agriculture.

Tubiash, Haskell Solomon	Dorchester	4 Sunset Court
Tucker, Donald Kent	Foxboro	Lambda Chi Alpha
Turner, Harvey Gay, Jr.	Andover	Q. T. V.
Tuttle, John Albert	Torrington, Conn.	Theta Chi
Waldman, James Saul	Springfield	19 Pleasant Street
Warner, Helen May	Sunderland	Care of A. M. Davis, North Amherst
Warner, Louise Isabel	Sunderland	Adams House
Watts, Harold Irving	Amherst	9 High Street
Waxler, Beatrice Rivoli	Holyoke	Adams House
Weaver, Donald Edward	Springfield	Kappa Sigma
West, Eleanor Alice	Sheffield	25½ Pleasant Street
Whitmore, Edith Lillian	Forestdale	19 Phillips Street
Whitney, Ira Bertram	West Springfield	244 Elm Street, West Springfield
Whittemore, Frederick Winsor	Canton	Q. T. V.
Widlansky, Myron Albert	Springfield	Phi Lambda Tau
Wilcox, Sarah Clark	Hudson	2 Sunset Court
Williams, Sidney	Peabody	7 Allen Street
Wingate, Marian Kay	Fairhaven	The Homestead
Wishart, Frederick Joseph	Turners Falls	13 Fourth Street, Turners Falls
Wisnieski, Karol Stanley	South Deerfield	Q. T. V.
Wood, Judith Gail	Weymouth Heights	Care of Carpenter, McClure Street
Wood, Ruth Elizabeth	Holyoke	Phi Zeta
Wyman, Raymond	Westfield	Alpha Gamma Rho
Zuckerman, Arthur Jacob	Pittsfield	North College
Zukel, John William	Northampton	55 Fort Street, Northampton

CLASS OF 1938.

Adams, Crawford William	Springfield	66 Lincoln Avenue
Alcorn, Robert Edward	West Springfield	Alpha Gamma Rho
Allaire, Royal Philip	Northampton	26 Dickinson Street, Northampton
Allen, Marshall Bigelow	North Grafton	Theta Chi
Avery, Arthur Chester	Amherst	45 East Pleasant Street
Avery, Rexford Hanson	Shrewsbury	Theta Chi
Avery, William Blodgett	Shelburne Falls	Sigma Phi Epsilon
Baker, Warren Sears, Jr.	Hanson	Q. T. V.
Ball, Elinor Prescott	Roxbury	8 Allen Street
Bargfrede, John Frederick	Pearl River, N. Y.	4 Nutting Avenue
Barton, Elizabeth Sherwood	South Amherst	25 Spring Street
Barton, Richard Wallace	Amherst	51 Amity Street
Beaumont, Davis Wortham	Amherst	101 Pleasant Street
Beaumont, Edgar Sidney	Amherst	86 Pleasant Street
Becher, Marion Rose	Longmeadow	2 Sunset Court
Belgrade, Harry Louis	Northampton	10 Wilson Avenue, Northampton
Beloin, Mederic Howard	Holyoke	Q. T. V.
Benson, Kenneth Ellis	Winchester	Alpha Gamma Rho
Bergman, William Erving	Shelburne Falls	Phi Lambda Tau
Bianco, Joseph Raymond	North Adams	83 Pleasant Street
Bieniek, Edwin Alexander	Holyoke	9 Ivy Avenue, Holyoke
Binder, Irving	Roxbury	Phi Lambda Tau
Bixby, Ruth Lydia	Sunderland	Sunderland
Blaisdell, Harry Linwood	Greenfield	Phi Sigma Kappa
Blake, Norman Perkins	Malden	Lambda Chi Alpha
Bliss, Shirley Alberta	Springfield	44 Pleasant Street
Blomberg, Earl Alfred	Leominster	Q. T. V.
Bloom, Esther Lillian	Springfield	Adams House
Bode, Fred William	Lawrence	35 Lincoln Avenue
Bokina, Carl John	Hatfield	Alpha Sigma Phi
Bozek, Stanley Milton	Easthampton	19 Franklin Street, Easthampton
Bray, Richard Irving	Gloucester	6 North Hadley Road
Bray, Warren Clarence	Granby	6 North Hadley Road
Brenna, Frank	Milford	North College
Brown, Elinor	Leicester	2 Sunset Court
Brown, Herbert Earl	Ashland	Lambda Chi Alpha
Brox, Frank Arthur	Dracut	East Experiment Station
Bryant, Warren Estey	Billerica Center	86 Pleasant Street
Bullock, William Augustine	Arlington	11 Phillips Street
Bush, John George	Turners Falls	Stockbridge Hall
Buzzee, Robert Daniel	Easthampton	Kappa Sigma
Carew, Helen Virginia	Monson	22 Fearing Street
Carpenter, Cynthia Ellen	Sterling Junction	Care of Hawley, Mt. Pleasant
Carr, Frank Fairfield	West Medford	Theta Chi
Caruso, Edward Francis	Springfield	Amherst Fire Station
Casazza, John Bernard	Merrimac	15 Phillips Street
Casey, Arthur Daniel	Franklin	17 Phillips Street
Cederberg, Florence Mildred	Jamaica Plain	8 Allen Street
Chase, Jessie Josephine	West Springfield	52 Amity Street
Chase, Philip Batcheller	Springfield	President's House
Chmura, Chester	Amherst	35 Lincoln Avenue
Clapp, Edward Theodore	Florence	20 Pine Street, Florence
Clark, Norman	Sharon	West Experiment Station
Collins, Charles Wilson	Medford	17 Phillips Street
Collins, William James	Salem	Q. T. V.
Conant, Chester Cook	Greenfield	Theta Chi

Cone, Leon Winston	North Brookfield	Alpha Gamma Rho
Corkum, Gladys Martha	Methuen	22 Fearing Street
Couper, Henry Vincent	Littleton	Phi Sigma Kappa
Coutu, Vernon Francis	Erving	Kappa Epsilon
Crowell, Stella Ida	Greenfield	Sigma Beta Chi
Curtin, Kathleen Teresa	Tyringham	Care of Gaskell, North Pleasant Street
Curtis, Clifford Alvin	Hopkinton	Lambda Chi Alpha
Cushman, Frank Melvin	Malden	7 Nutting Avenue
Czelusniak, Edward William	Easthampton	83 Pleasant Street
Davidson, Albert Alan	Springfield	112 Belle Street, Springfield
Dewey, Robert Clifford	Gardner	Farview Way
Dickens, Frederick Leland	Ashland	Poultry Plant
Dolliver, Marguerite Elizabeth	Belmont	Care of Gaskell, North Pleasant Street
Dunlop, John Thistle	Chicopee	Lambda Chi Alpha
Dunn, Joseph Francis	Brighton	35 Lincoln Avenue
Eaton, William	Waltham	Lambda Chi Alpha
Edson, Charles Grant	Springfield	26 Fearing Street
Edson, Theodora Elizabeth	East Braintree	22 Fearing Street
Eliopoulas, Nicholas Daniel	Haverhill	27 Fearing Street
Elkind, Henry Byron, Jr.	North Scituate	North College
Ellegaard, Lloyd Howard	Holyoke	17 Washington Avenue, Holyoke
Elliott, Charles Edward	Beverly	North College
Emery, Norman Alfred	East Lynn	Kappa Epsilon
Epstein, Walter Nathan	Dorchester	Mt. Pleasant Inn
Evans, Robert Earle	Northampton	21 Summer Street, Northampton
Fagan, Virginia Mary	Holyoke	67 Westfield Road, Holyoke
Fahey, Eleanor Dorney	Winthrop	24 North Prospect Street
Farnsworth, Albert Humphries	Worcester	Phi Sigma Kappa
Feinburg, Robert Sidney	Brighton	83 Pleasant Street
Ferguson, William Bragdon	Ludlow	Theta Chi
Filipkowski, Frances Pola	East Whately	East Whately
Filipkowski, Sabin Peter	East Whately	East Whately
Finkel, Jacob	Springfield	3 Algonquin Place, Springfield
Fitzpatrick, Richard James	Rochdale	M. S. C. Farmhouse
Fleming, James Appenzellar	Arlington, N. J.	Lambda Chi Alpha
Flower, Stanley Allen	Southbridge	Alpha Gamma Rho
Forbush, Alfred Merton	Longmeadow	North Hadley Road
French, Cyrus Edwin	West Roxbury	Theta Chi
Gage, Robert Wilcox	Needham	34 North Prospect Street
Gaskell, Betty Frances	South Deerfield	Sigma Beta Chi
Gibbs, Berthier Lyman	Saugus	Baker Lane
Giddings, Lane	Great Barrington	83 Pleasant Street
Gilbert, Ann Louise	Washington, D. C.	Adams House
Gill, Joseph Stanley	Bondsville	Bondsville
Glass, Edward Hadley	Lexington	Kappa Epsilon
Gleason, Robert Patrick	Northampton	82 Massasoit Street, Northampton
Goldman, Abraham Bernard	Dorchester	56 Pleasant Street
Golub, Samuel Joseph	Springfield	94 Cass Street, Springfield
Graham, William Butterworth	North Andover	Q. T. V.
Graves, Julia Tice	Sunderland	Sunderland
Green, Walter Albert	Lynn	Theta Chi
Gruner, Saul George	Pittsfield	56 Pleasant Street
Guenard, George Henry	Dracut	6 North Hadley Road
Hadro, Gertrude Josephine	Easthampton	Care of Hawley, Mt. Pleasant
Halpern, Herbert Milton	Holyoke	Phi Lambda Tau
Handverger, Edward	West Medway	North College
Harrison, William Hughes, Jr.	Lawrence	North College
Haskins, Philip Hanley	Williamstown	Theta Chi
Hauck, Russell John	Norwood	Kappa Sigma
Heller, Saul	Roxbury	North College
Hemond, Conrad Joseph, Jr.	Holyoke	43 Pearl Street, Holyoke
Hemond, Harold Crean	Holyoke	43 Pearl Street, Holyoke
Hennessy, Thomas	Newton Highlands	Phi Sigma Kappa
Higgins, Edward William	Arlington	Phi Sigma Kappa
Hill, Kathryn	Springfield	Adams House
Hoar, John Sherman	Amherst	50 Main Street
Hooker, Leland Worthington	Springfield	6 North Hadley Road
Houghton, Leroy Kingsburg, Jr.	West Roxbury	Lambda Chi Alpha
Hurwitch, Benjamin Gordon	Dorchester	Phi Lambda Tau
Ingram, Ralph	Falmouth	North College
Irving, Richard Randlett	Methuen	Kappa Sigma
Jackson, Mitchell Irving	Fairhaven	Phi Lambda Tau
Jacobson, Seymour Theodore	Springfield	31 Fearing Street
Javorski, Joseph John	Thompsonville, Conn.	56 Pleasant Street
Jefferson, Ruth Reta	West Springfield	10 Kellogg Avenue
Jenkins, Doris Wynne	Shrewsbury	Phi Zeta
Johnson, Herbert Harry	Roslindale	Theta Chi
Judd, Kirtley Leverett	Springfield	6 North Hadley Road
Julian, Carol	Amherst	4 Farview Way
Julian, Eleanor Burton	Amherst	4 Farview Way
Kaplinsky, Martha Dorothy	Holyoke	Adams House
Katzeff, Julian Herman	Brookline	Mt. Pleasant Inn
Kelley, Thomas Francis	Waltham	Lambda Chi Alpha
Kenyon, Marieta Gibson	East Douglas	12 North East Street
King, Richard Coleman	Newtonville	Theta Chi

Kingsbury, Frank William[1]	Sterling	Stockbridge Hall
Kingsbury, Helen	Sterling	22 Fearing Street
Kinsman, Jessie	Roxbury	Sigma Beta Chi
Klaucke, Rowland	Worcester	Alpha Gamma Rho
Klayman, Maxwell Irving	South Boston	67 Lincoln Avenue
Kodis, Ruth Elinor	Leicester	3 Cosby Avenue
Kohn, Bernard Lester	Roxbury	Alpha Epsilon Pi
Kuklewicz, Frank Peter	Turners Falls	179 Avenue A, Turners Falls
Lamb, David Allison	South Hadley Center	5 Burnett Avenue, South Hadley Center
Lavrakas, John	Watertown	North College
Lee, James Donovan	Chester	Alpha Gamma Rho
Levinson, Lawrence	Arlington	Care of Wentworth, East Pleasant Street
Liljegren, Solveig Utne	Wollaston	13 Fearing Street
Linden, Norman Elliott	Everett	Theta Chi
Lindstrom, Frederick Burgess	Palmer	34 Rockview Street, Palmer
Little, Melvin Theodore	East Weymouth	North College
Lombard, Elmer Ralph	Pittsfield	Alpha Gamma Rho
Lonergan, William Francis, Jr.	Springfield	Sigma Phi Epsilon
Luce, Clifford Norton	Worcester	Theta Chi
Lyon, Frank Merton	Hamden, Conn.	Theta Chi
Lyons, Robert Stephen	Springfield	Lambda Chi Alpha
Mabie, Richard Lockwood	Sharon	66 Lincoln Avenue
MacCurdy, Robert Douglas	Watertown	31 Fearing Street
Macomber, Lois Rogers	Fairhaven	Sigma Beta Chi
Mann, Lillian Russell	Westfield	Care of Hawley, Mt. Pleasant
Mayko, Walter Charles	Holyoke	163 Walnut Street, Holyoke
McGowan, Donald Sanford	Holyoke	Kappa Sigma
Mildram, David Elliot	Greenwood	Phi Sigma Kappa
Milkey, Elaine Helen	Montague City	Sigma Beta Chi
Millard, Carol Frances	Segreganset	30 North Prospect Street
Miller, Barbara Mitchell	Springfield	Adams House
Mish, Edward Theodore	South Hadley Falls	Thatcher Hall
Mitchell, Walter Kimball, Jr.	Newton Highlands	Theta Chi
Moore, Edwin Lewis	Amherst	R.F.D. 2
Moore, Joy Emma	Leeds	The Homestead
Morley, Frances Lillian	Amherst	Mount Pleasant
Morrison, Robert Karl	Pittsfield	North College
Morse, Laura Edison	Belmont	Adams House
Moult, Roy Hepworth	Lynn	32 North Prospect Street
NeJame, Mitchell Francis	North Adams	50 Pleasant Street
Nelson, Phyllis Louise	Arlington	Phi Zeta
Newman, Edward George	North Brookfield	Kappa Sigma
Niden, George	Needham	Kappa Sigma
Nolan, Kenneth Gordon	Danvers	French Hall
Noonan, William George	Haverhill	83 Pleasant Street
O'Connell, Mary	Wakefield	Phi Zeta
O'Hearn, Helen Esther	Cambridge	13 Fearing Street
Olivier, James Barnes	Holyoke	54 Lincoln Avenue
Osley, Donald	Hatfield	Alpha Sigma Phi
Page, Alfred Sylvester	South Amherst	Shay Street
Parker, Evelyn Maude	Orange	44 Triangle Street
Perkins, Robert Cowan	Worcester	Phi Sigma Kappa
Phillips, Barbara Sanborn	Greenfield	25 Shattuck Street, Greenfield
Pond, Virginia Mabel	Greenfield	12 Miles Street, Greenfield
Putnam, Paul Sears	Greenfield	North Amherst
Pyenson, Max	Otis	Alpha Epsilon Pi
Quast, Wentworth	Natick	Phi Sigma Kappa
Randall, Sylvia Arline	Granby	22 Fearing Street
Randlett, Horace Hillman	North Wilbraham	
Rathbone, Frances Bullard	Haverhill	Adams House
Rice, Theodore Albert	Wellesley	Phi Sigma Kappa
Riel, Frederick Charles	Turners Falls	East Experiment Station
Riley, William Charles	Holyoke	Kappa Epsilon
Roberge, William Edward	Westfield	Sigma Phi Epsilon
Rosenbloom, Charles	Holyoke	19 Pleasant Street
Rounds, Dean Leonard	Reading	4 Sunset Court
Rozwenc, George Stephen	Northampton	5 Franklin Court, Northampton
Rustigian, Robert	Medford	42 McClellan Street
Rutter, Louise Baldwin	Waltham	2 Sunset Court
Savage, James Harvey	Lynnfield Center	17 Phillips Street
Scace, Elizabeth Terry	Pittsfield	13 Fearing Street
Schopfer, Jane Elizabeth	Worcester	Lambda Delta Mu
Seal, Ethel Frances	Worcester	Care of Hawley, Mt. Pleasant
Shaw, Marion	Belchertown	Adams House
Sievers, Frederick John	Amherst	35 Fearing Street
Silverman, Donald Lawrence	Roxbury	Alpha Epsilon Pi
Silverman, Stephen Israel	Milton	Alpha Epsilon Pi
Slesinski, Frank Alphonse	Northampton	Box 27, North Amherst
Slocomb, Jack Tibbets	Brockton	46 Triangle Street
Smardon, Philip	Portland, Maine	Kappa Sigma
Smith, Rodger Chapman	Amherst	West Street
Smith, Russell Eaton	Lawrence	Alpha Sigma Phi
Snow, Phyllis Maude	Brockton	Phi Zeta
Snyder, Harry Miles	Medford	6 North Hadley Road
Spaight, Kathryne Ida	Springfield	2 Sunset Court
Sprague, Edna Angie	Hamilton	Alpha Lambda Mu

[1] Candidate for degree of Bachelor of Vocational Agriculture.

Stewart, Christine Alan	Boylston	2 Sunset Court
Streeter, Mary Elizabeth	Holyoke	Phi Zeta
Strode, Barbara Jeanette	Marblehead	24 North Prospect Street
Swiren, Alfred Milton	Springfield	Care of Wentworth, East Pleasant Street
Taft, Emma Mather	Mendon	13 Fearing Street
Taylor, Winnifred Hope	Pittsfield	Alpha Lambda Mu
Tetreault, Herbert Arthur	Northampton	Kappa Epsilon
Thayer, Edith Gwendolyn	West Bridgewater	24 North Prospect Street
Theriault, Frederic Russell	East Weymouth	Care of Mr. Wood, Amity Street
Thompson, Elthea	Norwood	Phi Zeta
Tindale, John William	Brockton	Kappa Sigma
Tonkin, Maurice	Fitchburg	Phi Lambda Tau
Towle, Richard Washburn	Cohasset	Lambda Chi Alpha
Towne, Louisa Elsie	Norfolk	24 North Prospect Street
Townsley, Floyd Wayne	Ashfield	Lambda Chi Alpha
Umansky, Frank Lewis	Springfield	19 Fearing Street
Vaill, Phila Kellogg	Monson	30 North Prospect Street
Valvanis, Nicholas John	Haverhill	11 Phillips Street
Villaume, Osgood Louis [1]	Malden	President's House
Walkey, Delia Roberta	South Hanson	Phi Zeta
Welcker, William Fuller	Holyoke	4 Sunset Court
Wheeler, James Francis	Natick	Alpha Gamma Rho
Whitney, Walter Augustus, Jr.	Ashfield	Ashfield
Wiggin, Stanley Hopkins	Newton Center	Alpha Gamma Rho
Wildner, Carl Richard	Amherst	Belchertown Road
Willard, DeVoe Holmes	Baltimore, Md.	Care of Dr. Ritchie, Mt. Pleasant
Wilson, Margaret Dorothy	Holyoke	69 Sycamore Street, Holyoke
Winblad, Fritz Albert Sigfrid	Chelmsford	Q. T. V.
Wood, Douglas James	Florence	Q. T. V.
Wood, Lois Virginia	West Upton	13 Fearing Street
Wood, Ruth Elizabeth	Springfield	Adams House
Woodin, Marjorie Helena	Millers Falls	50 Sunset Avenue
Youngren Clare Pauline	Orange	Draper Hall

CLASS OF 1939.

Alexion, Alexander	Fairhaven	Phi Sigma Kappa
Alfieri, Mario Paul	Amherst	24 Railroad Street
Allen, Robert Searle	Westfield	Phi Sigma Kappa
Andersen, Henry Gardner	Newton Centre	Birch Lawn
Anderson, Rita	Easthampton	61 Northampton Street, Easthampton
Auerbach, Milton Edward	Springfield	North College
Balcom, John Murray	Quincy	Care of Dr. Lindsey, Mt. Pleasant
Barké, Harvey Ellis	Plymouth	83 Pleasant Street
Barrett, William Francis	Adams	3 Nutting Avenue
Bartlett, Lawrence Matthews	Medford	17 Phillips Street
Beck, Sidney Harold	Malden	North College
Beckman, Wallace George	Springfield	50 Pleasant Street
Belgrade, Max	Northampton	10 Wilson Avenue, Northampton
Bemben, John	Hadley	Hadley
Benjamin, George Cobb	Lee	North College
Bennas, James George	Amherst	29 Main Street
Berry, Robert Elmer	Springfield	35 North Prospect Street
Bettoney, Stanley	Stoughton	Q. T. V.
Bischoff, George Herman	Holyoke	North College
Bixby, Lawrence Hubbard	Sunderland	Sunderland
Blassberg, Irving	Turners Falls	Phi Lambda Tau
Bolton, James Henry	East Northfield	86 Pleasant Street
Booth, Mabelle	Foxboro	6 McClure Street
Bradley, Geraldine Irene	Amherst	48 Pleasant Street
Branch, Charles Leland	Amherst	8 Dana Street
Brann, James Lewis, Jr.	Westwood	15 Phillips Street
Brett, Pauline Jean	Duxbury	Draper Hall
Briggs, Beryl Frances	Ashburnham	3 Cosby Avenue
Brisset, Pauline Amelia	Holyoke	895 Hampshire Street, Holyoke
Broadfoot, Arthur David	Amherst	130 Pleasant Street
Brody, George	Roxbury	Poultry Plant
Brown, Donald Emerson	Beverly	North College
Burgun, Philip Eugene	Canton	Sigma Phi Epsilon
Burke, Rosamond Margot	Beverly	Care of Gaskell, North Pleasant Street
Burnett, Karl Henry	Feeding Hills	Line Street, Feeding Hills
Cadigan, Donald Winslow	Greenfield	North College
Cain, Robert Emery	Conway	Kappa Sigma
Calo, Donald	Flushing, N. Y.	Phi Sigma Kappa
Carp, Abraham	Boston	Alpha Epsilon Pi
Cassidy, Charles William	Framingham	3 McClellan Street
Cassidy, Wellington Elmer	North Andover	42 McClellan Street
Cayer, Roger	St. Hyacinthe, Canada	32 North Prospect Street
Chapin, Ronald Hale	Greenfield	11 Phillips Street
Christie, Charles Frederic	Amherst	2 Tyler Place
Ciereszko, Leon Stanley	Holyoke	North College
Clapp, Elizabeth May	Springfield	6 McClure Street
Cohen, Lester	Springfield	1 Phillips Street

[1] Candidate for degree of Bachelor of Vocational Agriculture.

Cole, Robert Salisbury	Westfield	Care of Dr. Alexander, Old Town Road
Cole, Roger Martin	Marblehead	Phi Sigma Kappa
Colgate, Doris	Billerica	Adams House
Cooper, Grace Battell	Stockbridge	33 East Pleasant Street
Copeland, Lloyd Bardwell	Colrain	10 Kendrick Place
Copeland, Marjorie Louise	Colrain	10 Kendrick Place
Cousins, Ivan Roper	Greenfield	83 Pleasant Street
Cowles, Donald Harry	Brighton	Lambda Chi Alpha
Cox, William Hayward	Bridgewater	33 Lincoln Avenue
Crosby, Justina Cotta	Newton Centre	70 Lincoln Avenue
Crowley, Shelagh Agnes	West Springfield	6 McClure Street
Curtis, Eleanor Savel	Worcester	8 Mt. Pleasant
Czajkowski, Mildred Ann	Amherst	R.F.D. 3, Box 107
Damon, Marjorie Eva	Haydenville	70 Lincoln Avenue
Davenport, Beatrice Louise	Mendon	13 Fearing Street
Daw, Harry Harris, Jr.	Farnumsville	3 McClellan Street
Decatur, Dorothy Mary	Wayland	Adams House
Decker, Roger Herman	Westfield	17 Phillips Street
Degraff, Raymond Alphonse	Holyoke	Q. T. V.
Dimock, Edgar Wellwood	Oxford	Baker Lane, Care of Webb
Dixon, Ethel Winnifred	Leverett	Leverett
Doherty, Joseph Anthony	Revere	11 Phillips Street
Dorman, Kenneth Ronald	Gilbertville	North College
Dyer, Doris Hopkins	Saugus	70 Lincoln Avenue
Eaton, Elizabeth Dockham	Holyoke	Summer Street, North Amherst
Eldridge, Eva Margaret	South Yarmouth	Sigma Beta Chi
Eldridge, Everett Warner, Jr.	Palmer	Theta Chi
Elliott, Richard Duncan	Winchester	Care of Cromack, North Pleasant Street
Enright, Thomas Joseph	Pittsfield	Lambda Chi Alpha
Esson, Marjorie Harrold	Dorchester	Adams House
Estabrook, Frederick Dickinson	Northampton	Kappa Sigma
Fanning, Francis Thomas	Milton	North College
Fanning, Paul Richard	Milton	North College
Farren, Francis John	Adams	11 Phillips Street
Fay, Leo Daniel	Boston	North College
Featherman, Maurice	Natick	Alpha Epsilon Pi
Fisher, Myron Wolf	Winthrop	Phi Lambda Tau
Fitts, Eleanor Frances	Northboro	115 Butterfield Terrace
Fitzpatrick, William Henry	Amesbury	North College
Flynn, Elizabeth Peer	Belchertown	Belchertown
Foerster, Wilma Ruth	Holyoke	45 Lawler Street, Holyoke
Fogel, Bertram	Roxbury	3 Nutting Avenue
Fortin, Constance Claire	Holyoke	Phi Zeta
Foster, Ralph Longwell	Colrain	Colrain
Fowell, Donald Maxwell	Northampton	61 Woodlawn Avenue, Northampton
Freedman, Arnold Elliot	Roxbury	North College
Friedman, Harry Falk, Jr.	Newton Centre	7 Allen Street
Galvin, John Joseph	Northampton	5 Edward's Square, Northampton
Gieringer, Eugén Pierre	Cambridge	Kappa Sigma
Giles, Richard Alden	Cummington	Kappa Epsilon
Glass, Robert Butterfield	Arlington	83 Pleasant Street
Glick, John Ferol	Amherst	6 North Hadley Road
Glow, Lewis Lyman	East Pepperell	Colonial Inn
Goldberg, David	Northampton	276 State Street Northampton
Goldberg, Florence Sylvia	Allston	Adams House
Goldman, Sylvia	Worcester	Adams House
Goode, Frederick Dickinson, Jr.	Auburndale	83 Pleasant Street
Gordon, Harold Thomas	Holyoke	71 Center Street, Holyoke
Gove, Chester Allen	Walpole	Phi Sigma Kappa
Grant, Emerson Wallace	Middleboro	Birch Lawn
Graves, James Oliver	Greenfield	Alpha Gamma Rho
Griffin, Charles William	Holyoke	934 Dwight Street, Holyoke
Gunness, Marion Elizabeth	Amherst	105 Butterfield Terrace
Hall, Bettina	Foxboro	6 McClure Street
Hallas, Helen Hattie	Newton Centre	Adams House
Handforth, Thomas Edward	West Medway	9 Fearing Street
Hanigan, William James, Jr.	Springfield	7 Chestnut Street
Harris, Marjorie Eulala	Leominster	Care of Carpenter, McClure Street
Haylon, George Joseph	Pittsfield	Lambda Chi Alpha
Haynes, Paul Harlow	Southbridge	North College
Healy, Frank Clifford	Buckland, Conn.	3 Nutting Avenue
Herman, Jeanette	Roxbury	16 Nutting Avenue
Higginbotham, Harold Garland	Worcester	86 Pleasant Street
Hornbaker, David Winford	Worcester	Theta Chi
Howe, William Wallace, Jr.	Dalton	Theta Chi
Howes, Herbert Shurtleff	Middleboro	Kappa Sigma
Jablonski, Stephen Malcolm	Greenfield	8 Power Court, Greenfield
Jackson, Donald Bolles	Amherst	57 Lincoln Avenue
Jackson, Ira Lee	Fairhaven	Phi Lambda Tau
Jasper, Elizabeth Shirley	Springfield	5 McClure Street
Jensen, Rose Kristine	Worcester	30 North Prospect Street
Johnson, David Hammond	Suffield, Conn.	Sigma Phi Epsilon
Johnson, Lawrence Edward	Holyoke	Kappa Sigma
Johnson, Peter VanBrocklyn	Ashland	Care of Dr. Alexander, Old Town Road

Julian, Charles Nelson	Amherst	4 Farview Way
Kaplan, Arthur Milton	Chelsea	North College
Kaplinsky, Anne Fern	Holyoke	Draper Hall
Katz, Coleman	Boston	Phi Lambda Tau
Keefe, Mary Margaret	Westfield	McClure Street
Kerivan, Katherine Eleanor	Newton Upper Falls	Adams House
Kertzman, Louis	Somerville	Alpha Epsilon Pi
Keyes, Edmund Mac	Amherst	R.F.D. 2
King, James Sumner	Maynard	Lambda Chi Alpha
Kingsbury, Aileen Louise	Braintree	Adams House
Knorr, Louis Carl	Springfield	17 Holland St., Springfield
Krowka, Stanley Joseph	Northampton	108 Franklin Street, Northampton
Kruger, Everett Milton	Newton	Alpha Epsilon Pi
Lawson, Donald Seabury	Waltham	Phi Sigma Kappa
Leclair, Leopold Joseph	Amherst	11 South Pleasant Street
Lee, Richard Everett	New Bedford	Lambda Chi Alpha
Lehr, Charles Edward	Springfield	68 Parkside St., Springfield
Levin, Leonard Maurice	Northampton	35 Maple Street, Northampton
Lichtenstein, Parker Earl	Melrose	6 North Hadley Road
Lippincott, Clifford Ellwood	Lee	Care of Dillingham, Baker Lane
Luce, Phillips Edward	Framingham	Alpha Sigma Phi
Lyman, Thomas Graves	Easthampton	North College
Lynch, Julia Mary	Westfield	McClure Street
MacDonald, Margaret Phyllis	Huntington	23 Woodside Avenue
Madden, Margaret May	Methuen	Adams House
Malkin, Isaac Edward	Chelsea	Care of Wentworth, East Pleasant Street
Martin, Justine Gordon	West Roxbury	Lambda Delta Mu
Maschin, Marian Isabel	Westfield	Adams House
Mayo, Donald Stewart	Framingham	83 Pleasant Street
McCowan, William Blake	Worcester	Alpha Sigma Phi
McKinney, William James	Saugus	Sigma Phi Epsilon
Meade, Edward Griffin	Dorchester	North College
Meehan, James	Lawrence	Thatcher Hall
Meehan, Mary Theresa	Holyoke	8 Allen Street
Mendall, Seaton Crawford	Middleboro	7 Chestnut Street
Merrill, Frances Somerville	Raynham Center	Sigma Beta Chi
Metaxas, Harry Louis	Greenfield	27 Fearing Street
Meurer, Ethel	Springfield	30 Fearing Street
Mickelson, Clara Evelyn	Millbury	Adams House
Miller, Alexander Andrew	East Hartford, Conn.	5 Allen Street
Milne, Douglas Duncan	Lexington	Kappa Epsilon
Moore, Harold Emery, Jr.	Sharon	Phi Sigma Kappa
Moorehead, Fulton Albert	Melrose	Birch Lawn
Morey, Clifton Wentworth	Belmont	North College
Morin, Edward Laurence	Amherst	1 McClure Street
Muller, Robert Harold	Darien, Conn.	Lambda Chi Alpha
Murphy, John Joseph	Lynn	Phi Sigma Kappa
Murphy, Robert Joseph	Springfield	222 King Street, Springfield
Myerson, Alvan John	Brookline	Alpha Epsilon Pi
Najar, Gordon Ellery	Housatonic	Thatcher Hall
Nestle, Shirley Elizabeth	Amherst	Triangle Street
Nichols, Dorothy Elizabeth	Westfield	Care of Carpenter, McClure Street
Norwood, Olive Freeman	Worcester	Care of Kauffman, Triangle Street
O'Donnell, Grace Patricia	Westfield	McClure Street
O'Donnell, William Gregory	Milford	67 Lincoln Avenue
Olson, Elizabeth Janet	Manchester	Adams House
Orlen, Samuel	Holyoke	11 Phillips Street
Packard, Robert Wesley	Worcester	83 Pleasant Street
Page, Tracy Omar	Springfield	22 Sunset Avenue
Parker, John Alfred	Ashby	83 Pleasant Street
Parks, Nancy	Sherborn	Sigma Beta Chi
Parmenter, Ray	Franklin	Alpha Sigma Phi
Paul, Joseph	Northampton	359 Bridge Street, Northampton
Pereira, George Anthony	Holyoke	97 Pleasant Street
Phelps, Ellsworth, Jr.	Northampton	Kappa Epsilon
Pickard, Laurence Kent	Salisbury	Care of Dr. Lindsey, Mt. Pleasant
Podolak, Stanley	Easthampton	79 Maple Street, Easthampton
Powers, Richard Lyman	West Springfield	Sigma Phi Epsilon
Pratt, John Jacob	Cohasset	97 Pleasant Street
Purnell, Frederick	Amherst	2 Tyler Place
Pushee, Virginia	North Amherst	North Amherst
Reade, Irvin Douglass, Jr.	Whitman	North College
Reed, Ralph Herbert	Northfield	7 Chestnut Street
Reiser, Milton Paul	Malden	Phi Lambda Tau
Richardson, Eunice Moore	Baldwinsville	Care of Mrs. Dixon, North Amherst
Riel, Francis James	Turners Falls	East Experiment Station
Roberts, Everett[1]	Quincy	Q. T. V.
Rodda, Charles, Jr.	Springfield	Lambda Chi Alpha
Rogosa, Mary	Lynn	Adams House
Rose, Harold Davies	Medford	North College

[1] Candidate for degree of Bachelor of Vocational Agriculture.

Rosen, Sidney	Dorchester	4 Sunset Court
Rosenthal, Morris	West Springfield	Allen Street
Ross, Albert Henry	Dorchester	86 Pleasant Street
Salmela, Henry Arthur	Maynard	27 Fearing Street
Sanborn, Lee Lawrence	Holyoke	North College
Sangster, Donald Lincoln	Holyoke	11 Phillips Street
Sannella, Joan Rosina	Springfield	6 McClure Street
Schmidt, Vincent Raymond	New Bedford	Thatcher Hall
Schwartz, Charles	Roxbury	North College
Schwartz, Ernest	Springfield	Phi Lambda Tau
Sedoff, Bernice	Winthrop	Adams House
Sheehan, Eleanor Louise	Holyoke	Care of Gaskell, North Pleasant Street
Shipman, Lee Charles	Worcester	Alpha Sigma Phi
Sinclair, Belva Marie	Northampton	33 Prince Street, Northampton
Slater, Charles Edward	Tyringham	North College
Smart, Raymond Elmer, Jr.	Amherst	67 East Pleasant Street
Smith, Francis Eliot	Arlington	North College
Snow, Bethany Parker	West Roxbury	Adams House
Solar, Philip	Lynn	2 Allen Street
Southwick, Franklin Wallburg	White Plains, N. Y.	Lambda Chi Alpha
Spelman, George Joseph	Amherst	35 East Pleasant Street
Spofford, Inez Evelyn	Haverhill	Adams House
Stawiecki, Edmond Joseph	Webster	97 Pleasant Street
Steff, Howard Newton	North Dartmouth	109 Butterfield Terrace
Steinberg, Jacob	Chelsea	Alpha Epsilon Pi
Stetson, Courtney, Jr.	East Templeton	Theta Chi
Stoddard, Edward Forrest	Framingham	83 Pleasant Street
Stomberg, Marian King	Florence	56 South Street, Florence
Stone, Norman Edward	Brookline	Alpha Epsilon Pi
Sullivan, Arthur Ellis	Palmer	Theta Chi
Suomi, Martti Ilmari	Wellfleet	97 North Pleasant Street
Swanson, Robert Warren	Rockport	French Hall
Tappan, David Scott	Boston	83 Pleasant Street
Thomas, Gordon Franklin	East Bridgewater	Q. T. V.
Townsend, John Vincent	South Hadley	Alpha Sigma Phi
Truran, Margaret Elizabeth	Stockbridge	33 East Pleasant Street
Turner, Rodney Charles	Falmouth	7 Chestnut Street
Ullman, Robert Edgerton	Northampton	81 Harrison Avenue, Northampton
Vittum, Morrill Thayer	Ward Hill	Kappa Epsilon
Waddell, Ruth Eugenie	Arlington	Care of Kauffman, Triangle Street
Wakefield, Walter Thompson	Worcester	North College
Ward, Eleanor	Springfield	Adams House
Warner, Elizabeth Rose	Sunderland	Adams House
Warren, Francis Albert	Ashfield	Lambda Chi Alpha
Welch, Ervin Leonard	Melrose	Mt. Pleasant Inn
West, Mary Lees	New Bedford	Adams House
White, Ralph Wilfred	Brighton	19 Fearing Street
Wilcox, Edmund Gillette	Stockbridge	Theta Chi
Wilcox, Marjorie Frances	Pittsfield	33 East Pleasant Street
Wildes, Horace Bradstreet	Dartmouth	84 Pleasant Street
Wilke, Gerhard Max	Holyoke	600 Canal Street, Holyoke
Willard, Edward Buck	Wollaston	84 Pleasant Street
Wilson, Elliot Tilden	Weymouth	Care of Dr. Lindsey, Mt. Pleasant
Wilson, Merton Frederick	South Hadley Falls	5 Allen Street
Winn, J. Henry	Mattapan	11 Phillips Street
Wirtanen, Leonard Charles	Quincy	42 McClellan Street
Witek, John Joseph	Greenfield	55 Colrain Street, Greenfield
Wojcieszek, Celia Mary	Ware	R.F.D. 3, Box 171
Wojtasiewicz, Henry	Chicopee	66 Lincoln Avenue
Yourga, Frank John	Greenfield	Care of Dr. Lindsey, Mt. Pleasant
Zajchowski, Walter Andrew	Chicopee	66 Lincoln Avenue
Zaskey, Lucy Anna	Amherst	R.F.D.
Zelazo, Stanley Frank	Adams	11 Phillips Street

CLASS OF 1940.

Abramovitz, Sydney	Beverly	Thatcher Hall
Abrams, Betty Vignes	Springfield	Adams House
Adelson, Arthur	Chelsea	North College
Alvord, Erma Stuart	Turners Falls	Adams House
Archibald, Jean Marie	North Amherst	North Amherst
Archibald, Priscilla Bales	Watertown	Draper Hall
Atwater, George Leonard	Westfield	Thatcher Hall
Bak, Mildred Marion	Hadley	Hadley
Banuzkewic, Anna Matilda	Pittsfield	Adams House
Barnard, Vincent Jason	North Adams	Thatcher Hall
Barney, Charles Henry	South Hadley	North College
Barton, Beryl Hazel	North Adams	Adams House
Bartosiewicz, Joseph	Northampton	51 Maple Street, Northampton
Bates, Mary Elizabeth	Pittsfield	Adams House
Beagarie, Bernard James	Greenfield	21 Beacon Street, Greenfield
Beames, Geoffrey Hamilton	South Woodstock, Conn.	Thatcher Hall
Beattie, Robert Allan	Lowell	Thatcher Hall
Benemelis, Robert Lorenzo	Holyoke	Thatcher Hall
Bennett, Charles Wilbur	South Hadley Falls	39 Bridge Street, South Hadley Falls

Bernstein, Robert Harold	Springfield	Thatcher Hall
Beytes, Deane Allen	North Plymouth	Thatcher Hall
Blake, Richard Franklin	Southville	Thatcher Hall
Blasko, John Edward	Amherst	174 Sunset Avenue
Blauer, Harris	Brookline	North College
Bluemer, Charlotte Esther	Holyoke	128 Nonotuck Street, Holyoke
Bowen, Earl Kenneth	West Springfield	Thatcher Hall
Bowman, Louise	Medford	Adams House
Boyd, Glenn David	Amherst	16 Fearing Street
Bradshaw, Marie Tullner	Chicopee Falls	Adams House
Brault, Clement Edmond	New Bedford	Thatcher Hall
Brown, Roger Whittemore, Jr.	Lexington	Thatcher Hall
Brunner, Harold Arnold	Webster	Thatcher Hall
Buckley, James Bernard	Springfield	Thatcher Hall
Buckley, Rita Marie	Beverly	Sigma Beta Chi
Burakoff, Morris Hyman	Chelsea	Thatcher Hall
Burns, Herbert Vane	Gloucester	Thatcher Hall
Campbell, Janet Whittemore	Springfield	28 Amity Street
Carew, Pauline Isabel	Worcester	Adams House
Carpenter, Jean Pauline	Webster	Adams House
Carpenter, Millicent	Worcester	Adams House
Carroll, Leo Gary	Bridgewater	Thatcher Hall
Casey, Thomas Allen	Somerset	North College
Cashman, Robert Norman	Easthampton	22 Searles Avenue, Easthampton
Chalfen, Melvin Harold	Brookline	11 Phillips Street
Chapin, Hazel Ruth	Sheffield	Adams House
Chapman, Robert Morgan	Waverley	Thatcher Hall
Clark, Edith Marjorie	Sunderland	Adams House
Clark, Ralph Grames	Enfield	Care of Allen, Farview Way
Cohen, Isadore	Dorchester	Thatcher Hall
Cole, Frederick John	Springfield	Thatcher Hall
Cooper, Kathleen Freda	Amherst	105 Butterfield Terrace
Corcoran, Anne Katherine	Stoneham	Adams House
Cowling, Douglas Hadfield	West Concord	Thatcher Hall
Creesy, Lorraine	Westwood	Adams House
Creswell, Robert Miller	Worcester	North College
Curran, George Morton	Northampton	17 Madison Avenue, Northampton
Dailey, Gerald Michael	Ashmont	Thatcher Hall
Daley, Frank Robert Lee, Jr.	Holyoke	Thatcher Hall
Dalton, Frank Herbert	Greenfield	Thatcher Hall
Davenport, George Godfrey, Jr.	Mendon	Thatcher Hall
Davis, Franklin Milton, Jr.	Waltham	Thatcher Hall
Davis, Ida Bessie	East Taunton	Adams House
Dec, Anne Sophie	Hadley	Hadley
Deneault, Emile Eugene	Greenfield	27 High Street
Dereg, Edmond John	Holyoke	Thatcher Hall
Donahue, Charlotte Lee	Newton Lower Falls	Draper Hall
Donoghue, Joseph Patrick, Jr.	Newburyport	116 Pleasant Street
Doran, Katherine Hazel	Amherst	26 Lincoln Avenue
Downs, Currie Hayes	Lynn	Thatcher Hall
Ducy, Robert Allen	Thorndike	Thatcher Hall
Dunham, Agnes Armstrong	Valatie, N. Y.	Adams House
Dunn, Robert Francis	Pittsfield	Thatcher Hall
Eaton, Robert Bowker	Waltham	Thatcher Hall
Ellery, Evelyn Dennison	Gloucester	Adams House
Farnsworth, Reaetta Barbara	Worcester	Adams House
Filios, John Edward	Westfield	Thatcher Hall
Finik, Stanley Theodore	South Hadley Falls	North Main Street, South Hadley Falls
Firth, Margaret Asquith	Lawrence	Adams House
Flanagan, George Francis	Easthampton	55 Clark Street, Easthampton
Fleming, Urban Cyril	Holyoke	53 Howard Street, Holyoke
Foley, Robert Thomas	Turners Falls	Thatcher Hall
Foley, William Gregory	Salem	Thatcher Hall
Foster, Willard Olcott	Marion	Thatcher Hall
Fram, Harvey	Worcester	Thatcher Hall
Fram, Paul	Worcester	Thatcher Hall
Freeman, Lawrence John	Southbridge	Thatcher Hall
Gale, Virginia	Marblehead	Adams House
Garipay, Ruth Virginia	Lynn	Adams House
Geoffrion, Philip Carl	West Springfield	North College
Gillmore, Vern Winslow	Gilbertville	North College
Glashow, Arnold Irving	Roxbury	North College
Glazier, Thelma Nellie	Leverett	Leverett
Gleason, Charles Leslie, Jr.	Hanover	Thatcher Hall
Glendon, Richard Russell	Winchester	Thatcher Hall
Goodrich, Carl Ambrose, Jr.	Holyoke	749 Hampden Street, Holyoke
Goodwin, William Francis	Winthrop	Thatcher Hall
Gould, Evelyn Atherton	Walpole	Adams House
Graves, Myra Campbell	Sunderland	Sunderland
Gregg, Burton William	Westminster West, Vt.	Thatcher Hall
Griffin, Harold Emory, Jr.	Boston	North College
Hagelstein, Arthur Alexander	Stoughton	North College
Hager, Myron Dexter	South Deerfield	Inwood
Hall, Frieda Lillian	Braintree	Adams House
Hall, John Walton	Marshfield	Thatcher Hall
Hall, Robert Edward	Upton	Thatcher Hall
Hanley, Robert Hayes	Hopedale	Thatcher Hall
Harding, Malcolm Bennett	Westfield	Thatcher Hall
Hawthorne, Frank Douglass	Amherst	South East Street

Hennessy, David Elliott	Cherry Valley	North College
Herrick, Thomas Waldo, Jr.	South Duxbury	Thatcher Hall
Hill, Ralph Brewer	Ipswich	Thatcher Hall
Hitchcock, Stanley Haskell	Gilbertville	North College
Holmes, Paula Yvonne	Winthrop	Adams House
Hopkins, Franklin Adelbert	Leverett	Leverett
Howe, Arthur Fenner	Brockton	Thatcher Hall
Howe, Elizabeth Margaret	Pittsfield	Draper Hall
Hoxie, Howard Mason	Northampton	44 North Elm Street, Northampton
Hughes, Fredrick Kenneth	Holyoke	Thatcher Hall
Ingham, John Stanislaus	Ludlow	Thatcher Hall
Irwin, Marjorie Buck	Palmer	Adams Hall
Jackson, Olive Georgina	Monson	2 Farview Way
Jacobs, Priscilla	Holliston	Adams House
Jakobek, John Chester	Hadley	Hadley
Jaquith, Richard Herbert	Northampton	48 Massasoit Street, Northampton
Jewell, Eleanor Frances	Worcester	Adams House
Johnson, Louis Fingal, Jr.	Gloucester	Thatcher Hall
Johnson, Margery Dean	Southboro	Adams House
Jones, Robert Lincoln	Princeton	Thatcher Hall
Joseph, Richard Peters	North Truro	Thatcher Hall
Joyce, Robert Arthur	Florence	291 Locust Street, Florence
Kelfer, Albert Irving	Winthrop	Thatcher Hall
Kelly, Dorothy Mildred	Watertown	Adams House
Kelso, John Howe	Chester	Thatcher Hall
Kennedy, Robert Charles[1]	North Dartmouth	Thatcher Hall
Kenny, Loretta Christine	Palmer	Adams House
Kenyon, Elizabeth	Wellesley	Adams House
Keville, Francis Bartholomew	East Lynn	Thatcher Hall
King, James Herbert, Jr.	Worcester	Thatcher Hall
Kohls, Rosa Frieda	Dorchester	Draper Hall
Kokins, Carl Ernest	Ashland	Thatcher Hall
Krauss, Herbert	Great Barrington	Thatcher Hall
Kuusela, Ruth Marguerita	Gardner	Adams House
Lamon, Ruth Daisy	North Adams	Adams House
Langworthy, Everett Walter	Chester	Thatcher Hall
Lanson, Raino Kullervo[1]	Worcester	Thatcher Hall
Larkin, Joseph Phelps	Watertown	Thatcher Hall
Lavrakas, Vasilis	Watertown	35 Lincoln Avenue
Leete, Catherine Martin	Briarcliff Manor, N. Y.	Adams House
Lepine, Arthur Joseph	Holyoke	Thatcher Hall
Levitch, Gerald Joseph	Greenfield	Thatcher Hall
Levy, Roma Dina	Pittsfield	Adams House
Levy, Sumner Charles	Cambridge	North College
Lindsey, Roger Hurlin	Ware	Thatcher Hall
Lipshires, Sidney Samuel	Northampton	Thatcher Hall
Litchfield, Marjorie	Hyde Park	70 Lincoln Avenue
Little, Barbara	Newburyport	Adams House
Luce, Nancy Elizabeth	Fitchburg	Adams House
Maddocks, Mary Elizabeth	Foxboro	Adams House
Mahoney, Donald John	Holyoke	Thatcher Hall
Malins, Dana Harold	Brighton	83 Pleasant Street
Malm, Irma Isabel	Worcester	Adams House
Mango, John James	West Upton	Thatcher Hall
Mansfield, Charles Francis	Taunton	Thatcher Hall
Marcus, David Mordecai	Roxbury	North College
Marshall, Helen Alison	Amherst	Pelham Road
Martin, Robert Ansel	Pittsfield	Thatcher Hall
Matuszko, Victoria Katherine	Amherst	R.F.D. 3, Box 166
McAndrew, Gerald Edward	Barre	Thatcher Hall
McCarthy, John Joseph	Worcester	North College
McCartney, Robert Joseph	Salem	Thatcher Hall
McLaughlin, Charles LeGro	Amherst	4 Nutting Avenue
Merrill, Dorothy	Norwood	Adams House
Merrill, John Edward, Jr.	Southbridge	Thatcher Hall
Messer, Genevieve Evelyn	Spencer	Adams House
Meunier, Roland Gerald	Springfield	Thatcher Hall
Miller, John Calvin	Dodge	North College
Miller, Norman	Springfield	Thatcher Hall
Monk, Carolyn Emma	Groton	Adams House
Morgan, Roger Whitmore	Medford	Thatcher Hall
Morley, Dorothy Ruth	Amherst	Mt. Pleasant
Morris, Herbert Irving	Dorchester	Thatcher Hall
Morse, Roy Earl	Boston	4 Sunset Court
Moseley, Maynard Fowle	Allston	Thatcher Hall
Mosher, Robert Henry	Holyoke	Thatcher Hall
Muller, Richard Kenneth	Amherst	Blue Hills Road
Neznayko, Michael	Amherst	R.F.D. Box 185
Nietupski, Dominic Edward	North Wilbraham	North College
Norwood, Lewis Frank, Jr.[1]	Rockport	Thatcher Hall
Novelli, G. David	North Agawam	Thatcher Hall
Noyes, Arthur Alfred	Waban	Thatcher Hall
Nutting, William Brown	West Boylston	Thatcher Hall
O'Connell, Daniel John	South Hadley Falls	Thatcher Hall
Oertel, Priscilla May	South Hanson	Adams House
O'Neill, John Raymond	Holyoke	220 Sargent Street, Holyoke
Oppenheim, Edward Elliot	Brockton	North College
Osmun, John Vincent	Amherst	16 Northampton Road

[1] Candidate for degree of Bachelor of Vocational Agriculture.

Palumbo, Ralph Francis	Leominster	Thatcher Hall
Paul, Christopher	Dorchester	Thatcher Hall
Payson, James Warren, Jr.	Millis	Thatcher Hall
Pearlman, Morton Joseph	Brookline	North College
Pease, Virginia Helen	Amherst	13 East Pleasant Street
Pelissier, Helene Elizabeth	Hadley	Adams House
Phillips, Lester LeRoy, Jr.	Pittsfield	Thatcher Hall
Phipps, Dorothy Blanche	Holliston	Care of Pabst, Mt. Pleasant
Pike, Kenneth Vernon	Pittsfield	Thatcher Hall
Pitts, George Thomas, Jr.	Beverly	Thatcher Hall
Plichta, Richard John	Amherst	Strong Street
Podolak, Edwin Michael	Hadley	Hadley
Powers, Charles Arthur, Jr.	Braintree	Thatcher Hall
Powers, John Joseph	Pittsfield	Thatcher Hall
Pratt, Esther	Greenwood	Adams House
Prouty, Leroy Fletcher, Jr.	Springfield	Thatcher Hall
Purdy, Elizabeth Helen	Pittsfield	Adams House
Reagan, Lawrence Hunneman	Boston	Thatcher Hall
Reinap, Mia	Framingham	Adams House
Reisman, Melvin	Brighton	Thatcher Hall
Reynolds, Helena Elisabeth	Worcester	Adams House
Rice, Katherine Louise	Springfield	Adams House
Rice, Leonard Irwin	Winthrop	Thatcher Hall
Richards, William Henry	Northampton	406 Elm Street, Northampton
Robbins, Patricia Jane	Worcester	Adams House
Robbins, Shirley Palmer	Lexington	Care of Allen, Farview Way
Rodman, Robert	Dorchester	North College
Roffinoli, Rino Joseph	Williamstown	Thatcher Hall
Rojko, Anthony Stanley	Hadley	Hadley
Rosen, Sidney Walter	Lynn	Thatcher Hall
Ross, Walter Albert, Jr.	West Springfield	Care of Lambert, Pelham Road
Rossman, Edwin Malcolm	Allston	Thatcher Hall
Rourke, Dorothy Jean	Springfield	Adams House
Rubinwitch, Walter Richards	Springfield	North College
Rudge, Alfred Howard	Worcester	Thatcher Hall
Russell, Sylvia	Lynnfield Centre	Adams House
Russell, Walter Fred	Boston	Care of H. Hobart, North Amherst
Ryan, Winslow Edwin	Hudson	Thatcher Hall
Saltzman, Theodore	Roxbury	Thatcher Hall
Sanderson, James Joseph	Becket	Thatcher Hall
Santucci, Leo Joseph	Palmer	Thatcher Hall
Saunders, Francis Richard	Gloucester	Thatcher Hall
Sawyer, David	Dorchester	Thatcher Hall
Scannell, Flourence Peter	Greenfield	19 Linden Avenue, Greenfield
Scholz, Evi C.	State Line	Thatcher Hall
Schoonmaker, Norman James	Amherst	Amherst
Schreiber, Henry Marcus	Winthrop	Thatcher Hall
Searle, David Harold, Jr.	Housatonic	Thatcher Hall
Serex, John Paul	Amherst	69 Lincoln Avenue
Shapiro, Everett	Mattapan	Thatcher Hall
Shaw, Donald Houghton	Belmont	Thatcher Hall
Shaw, Marjorie Clarinda	Belchertown	Adams House
Shaw, Samuel Pettee	Middleboro	Thatcher Hall
Sheldon, Robert Irving	West Springfield	Thatcher Hall
Shepardson, Daniel Edgar	Athol	Thatcher Hall
Shepardson, Wilfred Britton	Athol	Thatcher Hall
Sherman, Arthur	Lanesboro	200 North Pleasant Street
Sherry, Myrtle Rosalyn	Haverhill	Adams House
Sichol, Myron Henry	Holland	Mt. Pleasant Inn
Siegal, Sidney Carl	Winthrop	Thatcher Hall
Silberberg, Bernard	Dorchester	2 Allen Street
Slack, Tracy Bernard, Jr.	Amherst	70 Lincoln Avenue
Slater, Edgar Burton	Tyringham	North College
Smalley, Dorothea Florentina	Worcester	Adams House
Smith, Alan Clark	West Newton	Thatcher Hall
Smith, Carlton Vernon	North Brookfield	Thatcher Hall
Smith, Frank Browne	Holyoke	10 Parker Street, Holyoke
Smith, John	Southwick	North College
Smith, Marion Marjorie	Springfield	Adams House
Spencer, Everett Royal, Jr.	Holyoke	North College
Spencer, Frank Henry	Northampton	439 Elm Street, Northampton
Spofford, Elizabeth Harriet	Lee	Adams House
Spungin, Benjamin	Springfield	Thatcher Hall
Spungin, Sidney	Greenfield	Thatcher Hall
Stahlberg, Eric, Jr.	Northampton	44 State Street, Northampton
Stanisiewski, Frank Raymond	Amherst	Triangle Street
Staples, Robert	Northampton	33 Olive Street, Northampton
Stewart, Jacqueline Louise	Amherst	Shay Street
Stewart, Mary Allerton	South Duxbury	Draper Hall
Storey, Harold Frederick	Millis	Thatcher Hall
Stranger, Homer Lincoln	Kingston	Thatcher Hall
Straube, Harold Louis	Bloomfield, N. J.	North College
Stutsman, Susan Elizabeth	South Hadley	Adams House
Sullivan, Albert William	South Hadley Falls	Thatcher Hall
Swenson, John William	Worcester	Thatcher Hall
Tappin, Warren Rawford	Winchendon	Thatcher Hall
Taylor, Priscilla Winslow	West Roxbury	Adams House
Taylor, Roy Clifton	Greenfield	Thatcher Hall
Terry, Dean Thomas	Palmer	67 Park Street, Palmer

Thornton, Henry Smith	Amherst	23 East Pleasant Street
Tiberii, Chester Howard	Charlton	North College
Tobey, George Burton, Jr.	Framingham	Thatcher Hall
Tolnick, Bernard	Roxbury	North College
Trees, Malcolm Parker	Maynard	Thatcher Hall
Tuttle, Matthew Nathan	Revere	Thatcher Hall
Twible, Carlton William	Gilbertville	Thatcher Hall
Vannah, Margaret Viola	Monson	Adams House
Vigue, George David	Framingham	Thatcher Hall
Washburn, Arthur Wendell, Jr.	Plainville	Thatcher Hall
Watson, Frederick Johnson	Jamaica Plain	Thatcher Hall
Webber, Helena Joan	Winchendon	14 Beston Street
Wetherell, Dexter Howard	Westfield	North College
Wheeler, Esther Hammond	Manchester, N. H.	Adams House
Whitcomb, Marciene Ramsdell	South Hadley Falls	4 Nutting Avenue
Wilansky, Nathan Leonard	Holyoke	54 Ridgewood Avenue, Holyoke.
Wileikis, Walter Anthony	North Amherst	Summer Street
Williams, Robert James	Milford	Thatcher Hall
Willson, Harold, Jr.	West Harwich	8 Nutting Avenue
Winchester, George Albert	Worcester	North College
Winer, Nathan	Three Rivers	Thatcher Hall
Wing, Francis	Sandwich	Thatcher Hall
Winter, Wilfrid Murray	Wrentham	Thatcher Hall
Wolfe, John Ferris	Winchester	Thatcher Hall
Wood, Beatrice	West Upton	Adams House
Woodbury, Edgar Harvey	Littleton	North College
Woytisek, Richard William	Westfield	Thatcher Hall
Wright, Fred Loring, Jr.	Brockton	North College
Wyman, Wallace Warren	Westfield	President's House
Zabierek, Julian Henry	Chelmsford	Thatcher Hall
Zelbovitz, Myer Samuel	Chelsea	Thatcher Hall
Zuckerman, Sidney	Pittsfield	Thatcher Hall

Special Students

Adams, Ruth Iola	Amherst	Whitney Street Extension
Brakey, Walter Glannie	Holyoke	264 Pine Street, Holyoke
Burke, James William	Amherst	23 Woodside Avenue
Davis, Martin Eugene	Amherst	Lincoln Block
Hoag, Katharine Harris	Amherst	8 Hitchcock Road
Howes, Eleanor Philbrick	Northampton	310 Elm Street, Northampton
Parker, Helen Elizabeth	Amherst	1 Sunset Court
Stein, Lloyd Everett	Holyoke	48 Longood Avenue, Holyoke

Students Registered After Catalogue for 1935–36 Was Published

1936

Robinson, Arthur Edward, Jr. — Arlington

1937

Becker, Philip — Easthampton

1938

White, John Wellman — Auburn, Maine

1939

Gaffney, William J. — South Hadley Falls

Special Student.

Steuer, Edward Gordon — Greenfield

Summary by Classes

Class	Men	Women	Total
1937	165	59	224
1938	187	73	260
1939	201	73	274
1940	231	86	317
Special	4	4	8
	788	295	1,083

Geographical Summary.

Massachusetts	1,057	New York	5
Maine	2	New Jersey	3
New Hampshire	1	District of Columbia	1
Vermont	3	Maryland	1
Connecticut	9	Canada	1
		Total	1,083

STOCKBRIDGE SCHOOL OF AGRICULTURE.

Graduates, 1936

Robert William Adams	Housatonic
Edward Howes Allen	South Hadley
Fred Henry Allen	Leominster
Kenneth Walker Alton	Webster
Fred Asher Anable	Westboro
Norman Sprague Bailey	Newton Centre
Lawrence Francis Barry	Roslindale
Fenwick Beekman, Jr.	Katonah, New York
Frank Sanford Bishop	Springfield, Vermont
Randolph Clayton Blackmer	Hardwick
Robert Edward Bossardt	Winchendon
John Emerson Bransford	Patchogue, New York
Edward Thomas Brown	Marblehead
Walter Monroe Bryant	Hyde Park
Kenneth Hyland Buell	Petersham
Harold Frederick Carlson	Brighton
Hugo Ernest Theodore Carlson	West Roxbury
Alfred Martin Chace	South Dartmouth
Nelson Christian Christensen	Wilson, Conn.
Ralph Dimock Cooley	West Granville
Harold Whitman Corkum	Sutton
Pardon Cornell	North Dartmouth
Alfred Mortomer Davenport, Jr.	Watertown
Russell Burdette Davis	North Westport
Ellison Dwight Dodge	Belchertown
John Gerard Donovan	Cohasset
William Ely Doty	West Springfield
Lloyd Arthur Douty	Worcester
Albert Oswald Fischer, Jr.	Vineyard Haven
Everette Richard Fish	Gill
Francis Edward Fournier	Dartmouth
Daniel Antoine Gleize	Stockbridge
Thomas James Goodwin	Newton Upper Falls
Malcolm Lawrence Graham	Bradford, Pa.
Elliot Durkee Hall	Dudley
Roland Hall	New Bedford
William Allen Harris	Springfield
Donald Harrison	Boston
Edwin Hayden Hartley	Westfield
Ann Haskell	Lynn
Hammond Chase Hosmer	Arlington
John Wadsworth Howe, Jr.	Nashua, N.H.
Roger Archie Hunt	Leicester
Frank Innes	Barre, Vt.
Charles Wesley Jacoby	Newtonville
Carl William Jekanowski	Amherst
Paul Jenkins	Wollaston
John Henry Jennings	Shelton, Conn.
William Joseph Jennings	South Natick
Charles Dennis Keefe, Jr.	Bellows Falls, Vt.
Edward Richard Kelly	Gilbertville
Frederick Oscar Lawrence	Weymouth
John James Loncar	Worcester
Pearson Macintosh	Longmeadow
Kenneth Randall Mason	Malden
James David Neal Mayo	Arlington
Earl Levi Morey, Jr.	Sturbridge
Katherine Berry Offutt	Southboro
Oscar Evald Olson, Jr.	Amherst
Warren Richmond Parker	Braintree
James Warren Patten, Jr.	Sterling
Robert Ely Pratt	Florence
John Francis Prentice	Plymouth
Merrick Barraud Price	South Weymouth
Raymond Willis Richardson	West Brookfield
Richard Alfred Robbins	Needham
William Cummings Ross	North Quincy
John Joseph Ruda, Jr.	Dudley
Donald Alexander Samson	Florence
Barbara Eleanor Schulte	Lowell
Philip Firth Smith	Methuen
John Davis Sprague	Weston
Richard Clinton Sturtevant	Halifax
John Sutherland	Springfield
Gordon Munsing Taylor	Granby
William Edward Thomas	Amherst
Ernest Harry Thorpe	Framingham
Andrew Timoshuk	Whitestone, N. Y.
Frederick Joseph Tompkins, Jr.	Lowell
Edwin Alexander Toth	Wallingford, Conn.
Arnold Victor Trible	Worcester
Herman Waldecker, Jr.	Braintree
William Godolphin Waldron, Jr.	Pittsfield
Walter Douglas Williams	Glenbrook, Conn.

As of the Class of 1935.

Melvin Brown Lucas	North Dartmouth

CLASS OF 1937.

Acker, Harry Richard	Hartford, Conn.	31 East Pleasant Street
Aho, Arne John	Maynard	17 McClure Street
Amenda, Alex Joseph	Amherst	79 Northampton Road
Andrews, Howard Henry	Fitchburg	75 Pleasant Street, A. T. G.
Anthony, Irving Sturtevant	New Bedford	16 Kellogg Avenue
Baldwin, Donald Eugene	Chicopee	75 Pleasant Street, A. T. G.
Bartlett, Stanley Wymann	Springfield	Springfield
Bauks, Joseph John	Marlboro	15 Cottage Street
Benson, Clarence William	Stoughton	35 Lincoln Avenue
Boguslawski, Irene	Amherst	71 Northampton Road
Bothfeld, Theodore, Jr.	Sherborn	53 Lincoln Avenue
Boyce, Thomas Joseph, Jr.	Swampscott	35 Lincoln Avenue
Broughton, Joseph Edwin, Jr.	Brookfield	12 Hallock Street
Burnham, William Ralph	Windsor, Vt.	73 Pleasant Street, Kolony Klub
Bush, George Barrett	Newfane, Vt.	15 Hallock Street
Cahill, Gordon Francis	Springfield	73 Pleasant Street, Kolony Klub
Callahan, Frederic Daniel	Sunderland	Sunderland
Callahan, Vincent Joseph	Harvard	86 Pleasant Street
Christensen, Irving Henry	Hartford, Conn.	75 Pleasant Street, A. T. G.
Cummings, Clifford Embury	West Springfield	West Springfield
Cunningham, Harry Irving	Framingham	17 McClure Street
Drago, Joseph Ernest	Fitchburg	101 Pleasant Street
Eastman, John Myron	Turners Falls	Turners Falls
Ecklund, Arthur Woodrow	Pittsfield	83 Pleasant Street
Eisenhauer, Robert Arnot	Cambridge	10 McClellan Street
Emanuele, Armando	Revere	c/o John Conklin, North Amherst
Fife, Edwin Kenneth	West Springfield	West Springfield
Fife, Frederick Edwin	West Springfield	West Springfield
Fischer, Frederick Oswald	Vineyard Haven	75 Pleasant Street, A. T. G.
Foley, Richard Francis	Amherst	3 Allen Street
Fowles, Elwyn Madsen	Southampton	Southampton
Fulton, Alpheus Oliver	Waltham	12 Hallock Street
Gagliarducci, Milton Moauro	Springfield	34 Main Street
Goldrick, Joseph Richard	Jamaica Plain	15 Cottage Street
Gould, Sidney	Malden	56 Pleasant Street
Graves, Douglas Beals	Ashfield	11 Phillips Street
Hair, Elmer Everett, Jr.	Worcester	42 Cottage Street
Hanks, Guilford Norman	Amherst	79 Main Street
Hartshorn, Arthur Nelson	Needham	c/o Mrs. Allen, Old Town Road
Higdom, Bernard Francis	Washington, D. C.	4 Allen Street
Hodgen, Robert Johnston, Jr.	Lanesville	Belchertown
Holmes, Edwin Stuart	South Weymouth	101 Pleasant Street
Horn, Welland Symons	Brandon, Vt.	18 Cottage Street
Hoyt, Arthur Wells	Merrimac	73 Pleasant Street, Kolony Klub
Jackimczyk, Bernard John	Florence	Florence
Jansen, Frederick Emil	Stamford, Conn.	c/o Mrs. Allen, Old Town Road
Keenan, John Francis	Cherry Valley	18 Cottage Street
Kelleher, Jack Joseph	Brockton	4 Allen Street
Kellogg, Alvin Richard, Jr.	Feeding Hills	11 Phillips Street
Kilgour, Andrew Ross	Somerville	101 Pleasant Street
Landers, James Michael	Holyoke	24 Beston Street
Leland, Richard Bruce	East Bridgewater	72 Lincoln Avenue
Levreault, Roger Pierre	South Hadley Falls	South Hadley Falls
Lowery, Samuel Robert	Arlington	31 East Pleasant Street
Mackie, Henry Leonard	Hubbardston	Stockbridge Hall, M. S. C.
Mercer, Donald Nelson	Palmer	73 Pleasant Street, Kolony Klub
Merino, Anthony Ralph	Waltham	c/o John Conklin, North Amherst
Minkus, Peter William	Westfield	73 Pleasant Street, Kolony Klub
Miskewich, Michael Wasil	Chicopee Falls	35 Lincoln Avenue
Moran, Eugene Denis	Chicopee Falls	Chicopee Falls
Morrice, James Forbes	Vineyard Haven	75 Pleasant Street, A. T. G.
McCollom, Welby Francis	Sterling	7 Nutting Avenue
McCormack, William Vialle	Arlington	38 Cottage Street
McCoy, John Angus	Belmont	38 Cottage Street
McDonough, Eugene Francis	Jamaica Plain	75 Pleasant Street, A. T. G.
Nelson, Ronald Arthur	Bernardston	East Pleasant Street
Newell, William Nelson	Maysville, Ky.	18 Cottage Street
Newhall, Marion Watkins	Peabody	16 Nutting Avenue
Norberg, Edward Francis, Jr.	Arlington	73 Pleasant Street, Kolony Klub
Olson, Edward Maurice	Amherst	Box 641
Powers, James Patrick	Greenwood	10 McCellan Street
Prindle, William Eaton	Springfield	31 East Pleasant Street
Prouty, John Albert	Whitman	4 McClure Street
Riddle, Malcolm	Cambridge	31 East Pleasant Street
Rosenfield, Robert Leonard	Dorchester	56 Pleasant Street
Ruggles, Richard Newton	Hingham	McClure Street, c/o Mrs. Britt
Sanderson, Winthrop Whitney	Greenfield	15 Hallock Street
Shattuck, Robert Vryling	Pepperell	73 Pleasant Street, Kolony Klub
Simmons, Herbert Carlson	Wollaston	3 Nutting Avenue

Smith, Elmer Clark	Waltham	75 Pleasant Street, A. T. G.
Smith, Harrison Edward, Jr.	Lexington	30 Sunset Avenue
Smith, Robert Little	Newburyport	3 Nutting Avenue
Spear, Manton Presby	Wakefield	46 McClellan Street
Stiles, David Nutting	Monson	111 Butterfield Terrace
Swatson, Benjamin	Amherst	Box 62
Taylor, Fred Leander, Jr.	Ashby	101 Pleasant Street
Taylor, Roger Francis	North Amherst	North Amherst
Trowbridge, George Willard	West Springfield	Stockbridge Hall, M. S. C.
Tucker, Frederick Chandler	Marlboro	75 Pleasant Street, A. T. G.
Tuller, Oliver Holcomb	West Simsbury, Conn.	7 Nutting Avenue
Wade, Dewhirst William	Holyoke	Holyoke
Wanczyk, Walter Charles	Hadley	Hadley
Whitcomb, Arthur Lewis, Jr.	Dodge	19 Fearing Street
Whitman, Pauline	Hyannis	30 North Prospect Street
Whittaker, Carleton Hall	Danvers	75 Pleasant Street, A. T. G.
Winkler, Marshall Norman	Wakefield	46 McClellan Street
Wojtkielewicz, Frank Joseph	South Deerfield	South Deerfield
Young, Wilbur Parmelee	Wallingford, Conn.	73 Pleasant Street, Kolony Klub

SPECIAL STUDENT.

Pollard, Albert William	Northampton	Northampton
Samson, Donald Alexander	Florence	Florence

CLASS OF 1938.

Allen, William Stowell	North Dartmouth	7 East Pleasant Street
Antes, Bertha Bement	Conway	Conway
Ashline, Francis Arthur	Fitchburg	Baker Lane, c/o Mrs. Webb
Atkins, William Chandler	Amherst	10 McClellan Street
Atwood, Howland Fay	Hartland, Vt.	17 Kellogg Avenue
Badger, Knight Abbott	Norwood	2 Allen Street
Baum, Philip Albert	Holyoke	Baker Lane, c/o Mrs. Webb
Beach, Arlene	Stratford, Conn.	30 North Prospect Street
Bearce, Lawrence Albert	Carlisle	42 Cottage Street
Bein, Beverly Sturgeon	South Hadley	South Hadley
Benchley, Edwin Allen	Brookline	7 Nutting Avenue
Bigwood, Virginia Isabella	Dorchester	8 Allen Street
Boettcher, William Smith	South Hadley	15 Phillips Street
Bookless, Sanford	Pittsfield	56 Pleasant Street
Bothfeld, Charles Henry	Sherborn	Baker Lane, c/o Mrs. Dillingham
Brennan, Clyde Towns	South Sudbury	17 Kellogg Avenue
Brown, Eben Barnard	North Attleboro	Baker Lane, c/o Mrs. Webb
Brown, Walter Herbert	North Dartmouth	7 East Pleasant Street
Bulkeley, David Robinson	Harvard	54 Pleasant Street
Bume, Rudolph Louis	Newfields, N. H.	43½ Sunset Avenue
Burnham, Frederic Munroe	Bolton	8 Kellogg Avenue
Callaham, Paul Frederick	Revere	17 Kellogg Avenue
Canney, Byron Dickinson	Whately	11 Phillips Street
Cavanaugh, Paul Stephen	West Boylston	12 Kellogg Avenue
Clayton, Richard Reiford	Saugus	Baker Lane, c/o Mrs. Webb
Clough, Rachel Louise	Palmer	Palmer
Clute, Howard LeRoy	Schenectady, N. Y.	Baker Lane, c/o Mrs. Webb
Coffin, Robert Frederick	New Rochelle, N. Y.	200 North Pleasant Street
Colby, Philip Newton	Wollaston	52 Lincoln Avenue
Collins, William George	West Medford	11 Phillips Street
Collis, Charles Henry	East Longmeadow	57 Pleasant Street
Cooper, William Wallace	Rochdale	27 Fearing Street
Costa, John Arthur	Newton	Baker Lane, c/o Mrs. Webb
Cox, Charlotte Leavitt	Holyoke	Mt. Pleasant, c/o Mrs.Morley
Davison, Howard Paul	Wallingford, Vt.	12 Kellogg Avenue
Deary, James Newman	Webster	38 Pleasant Street
DeBonis, Silvio Peter	Fitchburg	101 Pleasant Street
DeSpencer, John	Lawrence	McClure Street, c/o Mrs.Britt
Doty, Vernon Gilbert	West Springfield	West Springfield
Douglas, George Campbell	Roslindale	4 Allen Street
Dunham, Gardner Thayer	Attleboro	43½ Sunset Avenue
Elmer, Philip Warren	Melrose	52 Lincoln Avenue
Emery, Richard Holden	Westboro	4 Sunset Court
Estabrooks, Norman Wilcox	Norton	66 Lincoln Avenue
Fischer, Arnold Morton	Vineyard Haven	75 Pleasant Street, A. T. G.
Fisk, Herbert William	Fitchburg	43½ Sunset Avenue
Foster, Walter Gowdy	Broad Brook, Conn.	15 Cottage Street
Fournier, Ernest Charles	Webster	38 Pleasant Street
Frye, Roy Leonard	Leominster	15 Cottage Street
Gibson, James Parker	Watertown	2 Allen Street
Golash, Walter Francis	Haydenville	Haydenville
Goodale, Earl Stewart	Methuen	13 Hallock Street
Griffin, Henry Thompson	Bloomfield, Conn.	Triangle Street, c/o Mrs. Nestle
Haczela, Edward Howard	Savoy	6 Cosby Avenue
Hakes, Ivan Brock	Stockbridge	11 Phillips Street
Hammond, Lowell Knight	Hopedale	4 Sunset Court
Hanscom, Lloyd Allan	Boston	c/o Mrs. Allen, Old Town Road
Harlow, Ellis Chandler, Jr.	Amherst	East Pleasant Street
Harris, Herbert II	Lincoln, R. I.	84 Pleasant Street
Hartley, George Sylvester	Westfield	North Pleasant Street, c/o Mrs. Cromack
Hastings, Percival Vining	Agawam	43½ Sunset Avenue

Heitmann, Rolf Fedor Werner	Bedford Village, N. Y.	48 Pleasant Street
Helander, Edwin Eino	Maynard	7 East Pleasant Street
Hobbs, Walter Matthew	Nantasket Beach	McClure Street, c/o Mrs.Britt
Jenkins, James Joseph	Clinton Corners, N. Y.	30 Sunset Avenue
Jenney, Robert	Brockton	7 Nutting Avenue
Jessel, John	Methuen	Baker Lane, , c/o Mrs. Webb
Johnson, Chester Martin	Belmont	2 Allen Street
Kehoe, Norman Anthony	Natick	8 Kellogg Avenue
Kennedy, John Edward	Feeding Hills	3 McClellan Street
King, William Wright	Brookline	3 Allen Street
Knightly, Henry Francis	Amherst	2 Clifton Avenue
Kochakian, Vaughn	Haverhill	43½ Sunset Avenue
Ladd, Charles Weber	Wilbraham	North Pleasant Street, c/o Mrs. Haskins
Lambert, Gerard Joseph	East Braintree	16 Hallock Street
Lawrence, John Wesley	Portsmouth, R. I.	73 Pleasant Street, Kolony Klub
Lincoln, Norwood Francis	Attleboro	15 Phillips Street
Litwack, Hyman	Malden	56 Pleasant Street
Luther, Donald Robert	Dudley	13 Hallock Street
Lyon, Roland Eugene	Kitchawan, N. Y.	32 North Prospect Street
Maki, Arthur	Ashburnham	13 Hallock Street
Malmi, William Albert	Worcester	Baker Lane, c/o Mrs. Webb
Marsh, Maynard Frederick	Gorham, Maine	Baker Lane, c/o Mrs. Webb
Martinsen, Edward Martin	East Douglas	52 Lincoln Avenue
Martula, Joseph Charles	Hadley	Hadley
Meader, Freeman Daniel	Westport Harbor	18 Cottage Street
Melnik, Edward Roman	South Deerfield	South Deerfield
Miett, Lloyd Elsby	Sherborn	Baker Lane, c/o Mrs. Dillingham
Miller, Winifred Elizabeth	Holyoke	30 North Prospect Street
Millett, Leon Edwin	Whitman	57 Pleasant Street
Murray, Fred Henry	North Billerica	North Pleasant Street, c/o Mrs. Cromack
McHardy, Robert	LeRoy, N. Y.	4 Allen Street
Nagle, William Joseph	Millers Falls	31 East Pleasant Street
Nason, Donald Eldwin	Norton	66 Lincoln Avenue
Nehring, William Hans	Leeds	Leeds
Neilson, Margaret	Northampton	30 North Prospect Street
Nelson, Robert Elmer	Framingham	3 McClellan Street
Nielsen, Ivar Arne	Jamaica Plain	11 Phillips Street
North, Richard Belden	Lenox	31 North Prospect Street
Nutter, Wesley Archie	West Springfield	56 Pleasant Street
Oehler, Harold	Holyoke	Baker Lane, c/o Mrs. Webb
Oinonen, John Esa	Fitchburg	3 McClellan Street
Parker, John Earle, Jr.	Waban	72 Lincoln Avenue
Parker, Stanley Fulton	Braintree	16 Hallock Street
Parker, Wallace Richard	West Boylston	8 Kellogg Avenue
Peckham, Samuel Hall	North Attleboro	15 Cottage Street
Peirce, Estelle Nancy	North Dartmouth	30 North Prospect Street
Phillips, George Harold, Jr.	Natick, R. I.	3 McClellan Street
Pieper, Elizabeth Angela	Newton Centre	44 Pleasant Street
Provenzani, Eugene Micheal	Fitchburg	73 Pleasant Street, Kolony Klub
Reilly, Norman Joseph	Weymouth	15 Cottage Street
Rice, John Edward, Jr.	Marlboro	Butterfield Terrace, c/o Mrs. Gibbs
Richardson, Charles Almon	Melrose	North Pleasant Street, c/o Mrs. Harold Hobart
Richardson, Oliver Melvin	Lowell	2 Cosby Avenue
Riedl, Robert James	Leicester	8 Kellogg Avenue
Ruggles, Louis Andrew	Hardwick	10 McClellan Street
Russell, Theodore Arthur	Sunderland	Sunderland
Schall, Peter Noel	Darien, Conn.	17 Kellogg Avenue
Schwaab, Louis Charles	Auburndale	2 Cosby Avenue
Searle, Bertha Louise	Northampton	Northampton
Seelig, Walter Jerome II	Brooklyn, N. Y.	Mt. Pleasant Inn
Shuster, Henry Lloyd	Waban	McClure Street, c/o Mrs. Britt
Simonich, Francis Joseph	Chicopee	Chicopee
Sloet, John Jacob	Newton Center	73 Pleasant Street, Kolony Klub
Smith, Rupert Martin	Greenfield	63 Main Street
Spalding, Joseph Pierce	Woodstock, Conn.	7 East Pleasant Street
Sparks, Richard Marshall	Wakefield	46 McClellan Street
Speirs, Elizabeth Alice	West Dennis	30 North Prospect Street
Stone, Frank Manly	Boston	Q. T. V. Fraternity
Stone, Ralph Waldo	South Sudbury	31 Fearing Street
Surgen, Raymond Charles	Hadley	Hadley
Taylor, Richard Mather	Feeding Hills	11 Phillips Street
Tilley, Robert Franklin	Northampton	Northampton
Torchio, Joseph Anthony	Pittsfield	16 North Prospect Street
Treadwell, Edwin Hubbard	Lynn	Triangle Street, c/o Mrs. Nestle
Tryon, Ralph Goodrich	South Glastonbury, Conn.	3 McClellan Street
Vellali, Victor Joseph	Needham	3 McClellan Street
Vincent, Frank Welch	Boston	5 Paige Street
Wadleigh, Derwood Carvell	Quincy	32 North Prospect Street
Watson, Marion Patricia	South Hadley Falls	South Hadley Falls
Wells, Edmund Dwight, Jr.	New Bedford	3 Nutting Avenue
Williams, Elliot Albert	Dudley	13 Hallock Street
Wright, Gilbert Monroe	Northampton	Northampton

Yazwinski, Frank Stanley	Deerfield	Deerfield
Zak, Michael John	Sunderland	Sunderland
Zeise, Frank Karl	Springfield	11 Phillips Street

SUMMER SCHOOL, 1936

Aho, Olaf W.	Ashburnham
Atkins, Marjorie	Amherst
Baker, Dorothy M.	Millers Falls
Barton, Dorothy L.	Waterbury, Conn.
Beaumont, Edgar S.	Amherst
Benson, Kenneth E.	Winchester
Bliss, Sheldon P.	Greenfield
Bowler, Richard A.	Holyoke
Brackley, Floyd E.	Stafford Springs, Conn.
Brady, Lawrence D.	West Springfield
Bray, Warren	Granby
Brown, Grace F.	Milford
Buck, Agnes M.	Amherst
Buckley, Helen M.	Springfield
Bullock, William	Arlington
Burke, James W.	Amherst
Burnham, Robert A.	Becket
Burns, Dorothy M.	Palmer
Cadigan, Donald W.	Greenfield
Calkins, Margaret	Harvard
Cannon, Milton W.	Chicopee
Carbonneau, Leo W.	Ware
Chamberlin, Mrs. Mildred C.	Dalton
Champion, Frances C.	Greenfield
Chase, Jessie J.	West Springfield
Chesley, Ruth	Gardner
Clancy, William J.	Springfield
Collis, Charles A.	Taunton
Connor, Daniel J., Jr.	South Hadley Falls
Coughlin, Frank T., Jr.	Lee
Coughlin, Ursula	Lee
Crowley, Leo V.	Amherst
Crowley, Shelagh	West Springfield
Czajkowski, Janina M.	Amherst
Deady, Robert L.	Chicopee Falls
Doggett, Jane P.	Deerfield
Donnelly, Dorothea	Chester
Drewes, Mrs. Charles H.	Deerfield
Drummond, Robert	New Haven, Conn.
Dunker, Carl	Holyoke
Eaton, Elizabeth D.	Holyoke
Erikson, Ingrid	Northampton
Filipkowski, Frances P.	East Whately
Fisher, Robert B.	Northampton
FitzGerald, Dorothy	Belchertown
Fitzpatrick, Richard J.	Rochdale
Foran, John W.	Northampton
Frost, George E.	Holyoke
Gagliarducci, Vincent H.	Springfield
Gallagher, Charles F.	Springfield
Gaskell, Betty F.	South Deerfield
Gleason, Robert P.	Northampton
Glick, John F.	Amherst
Gordon, Virginia	Amherst
Hall, Christine	Northampton
Harriman, Joyce Garda	Northampton
Hart, Mary C.	Holyoke
Haskins, Dorothy I.	Greenfield
Hawley, Helen M.	Holyoke
Hebard, William E.	Northampton
Holden, Florence	Cushman
Hopkins, Louise A.	Northampton
Horwitz, Sumner L.	Mattapan
Howard, Harlan A.	Amherst
Howes, Bradford B.	Springfield
Hubbard, Richard	Sunderland
Iacovelli, Henry N.	Milford
Jackson, Donald B.	Amherst
Janick, Frances	Easthampton
Johnson, Herbert H.	Roslindale
Joyce, Dorothy	Amesbury
Julian, Carol	Amherst
Julian, Charles N.	Amherst
Keefe, Katherine G.	Hadley
Kennedy, James J.	Holyoke
Koch, Albert F.	Turners Falls
Litchfield, Doris	Wayland
Lubach, Helen	Mattapan
Luce, Clifford N.	Worcester
Lyons, Mary E.	Holyoke
Martin, Edward W.	Hudson
Masters, Dorothy L.	Stockbridge
Matthias, Mrs. Virginia P.	South Hadley
Merritt, Lucius A.	Williamsburg
Meyer, Edward	Springfield
Miller, Roswell	West Roxbury
Moriarty, Robert E.	Monson

Motroni, Ralph J.	Holyoke
Moult, Roy H.	Lynn
Munson, W. Squier	Amherst
Murphy, Gertrude	Palmer
McClintoch, Helen J.	Melrose
McKelligott, Mary M.	Palmer
MacKenzie, Warren L.	Florence
McLaughlin, Mrs. John P.	Binghamton, N. Y.
McQuestion, Dorothy	Hadley
NeJame, Mitchell F.	North Adams
Newman, Edward G.	North Brookfield
Newman, Kenneth R.	Hoosac Tunnel
O'Brien, George E.	Northampton
O'Brien, M. Josephine	Lee
O'Donnell, Katharine M.	Holyoke
O'Donnell, William G.	Milford
O'Keefe, Eileen F.	Fitchburg
O'Keefe, Katherine M.	Fitchburg
Page, Charlotte A.	Amherst
Parkinson, Leonard R.	Amherst
Perry, Marion L.	North Adams
Perry, Mildred G.	Lowell
Pierce, Dorothy	Holden
Porter, Wayland R.	Meriden, N. H.
Powers, Hazel	Hatfield
Reum, Alice H.	Turners Falls
Ritter, Ruth	Chicopee
Ritter, Virginia	Chicopee
Roney, Jeanette M.	Portland, Me.
Scott, Ruth E.	North Hadley
Shaw, Genevieve	Amherst
Shaw, Marion	Belchertown
Shea, Margaret L.	Holyoke
Sheehan, Eleanor	Holyoke
Sheffield, Norman L.	Enfield
Sievers, Frederick, Jr.	Amherst
Sims, Anne M.	Altoona, Pa.
Smith, Olive	Springfield
Snow, Annie E.	South Hadley
Souther, Clifton H.	Holyoke
Southworth, Grace	North Dana
Stiles, Vernon D.	Hadley
Stout, Ralph A.	Longmeadow
Thurlow, Donald F.	Greenfield
Trombly, Everett L.	Indian Orchard
Waterman, Jennie A.	Gorham, Me.
Watts, Harold I.	Amherst
Waxler, Beatrice	Holyoke
Whitcomb, Barbara	Amherst
Whitcomb, Ruth N.	Amherst
Wishart, Fred J.	Turners Falls
Wojcieszek, Celia	Ware
Wood, Ruth E.	Springfield
Youngren, Clare	Orange

WINTER SCHOOL, 1936

Almonte, Alfred	Providence, R. I.
Bailey, Frank W.	Amherst
Bennett, J. Richard	Springfield
Bertolini, Eugene J. A.	Bridgeport, Conn.
Blodgett, S. H.	Lincoln
Brasells, Rose A.	South Dartmouth
Brouillard, Raoul	Springfield
Brown, Justin H.	South Lancaster
Camp, John H.	Montgomery
Campbell, Ruth G.	Haverhill
Chamberlain, Byron	St. Paul, Minn.
Christenson, Carl W.	Roslindale
Clark, Hector T.	St. Louis Park, Minn.
Clauson, Albert, Jr.	Springfield
Currier, Perley P.	Haverhill
Curtis, Walter E.	Gardner
Danaher, Thomas S.	Kingston, N. Y.
Dinardi, Joseph	Melrose
Doherty, John W.	Woburn
Dole, Albion I., Jr.	Lynn
Dufresne, Peter	Acushnet
Eller, Ernst	Jacksonville, Fla.
Farmer, Bertram	Fairfield, Me.
Fielding, J. George	North Providence, R. I.
Frost, Josephine	Rockport
Frye, Albert M.	Leominster
Gardner, Karl H.	Haverhill
Glennie, C. Douglas	North Andover
Goodoff, Andrew E.	Mexico, Me.
Gorney, Walter	Pittsfield
Gund, Mrs. Henry	Amherst
Hague, Henry R.	Brookline
Hickey, Fred	Lawrence
Higgins, Albert C.	Plymouth
Hilton, Harry E.	Walpole
Holland, James J.	Manchester, N. H.

Horahan, Hazel	North Adams
Hord, Hilding S.	Marston Mills
Hosley, Lilian M.	East Kingston, N. H.
Hoyle, Luther M.	Cranston, R. I.
Kalashian, Harold	Worcester
Kaye, Harold	New Bedford
Kelley, Mrs. Ransom P.	Fairfield, Me.
Kennedy, Irving J., Jr.	Revere
Lucas, Melvin B.	Dartmouth
Mansur, Paul B.	Westminster
Metcalf, Alfaretta	Northampton
Mitchell, James E.	New York Mills, N. Y.
Morin, Raymond J.	Amherst
Morse, Edward W., Jr.	Concord
Morss, Henry H.	Marion
McIntyre, Alex B.	Schenectady, N. Y.
Nelson, Floyd C.	Amsterdam, N. Y.
Newkirk, Edward H.	Lincoln, Neb.
O'Keefe, J. Griffith	Glens Falls, N. Y.
Parker, Charles W.	Osterville
Parker, Mrs. Harriet D.	Springfield
Parsons, Howard D.	Bethel, Vt.
Petersen, Henry	Broad Brook, Conn.
Petersen, Olaf	Albany, N. Y.
Pieper, Elizabeth	Newton Centre
Prescott, Melville G.	Georgetown
Rattey, Wilfred H.	Pawtucket, R. I.
Robinson, Clinton	Hyde Park, Ontario, Can.
Ruckledge, Thomas R.	Lowell
Ryan, John E.	Newton
Sadlon, John M.	Little Falls, N. Y.
Schacht, Elmer H.	Des Moines, Ia.
Scott, Charles C., Jr.	Worcester
Seaman, Harold W.	Worcester
Shepardson, Robert W.	New Lenox
Smith, James A.	Providence, R. I.
Spear, Mabel A.	Roslindale
Steffany, Louis J.	New Britain, Conn.
Stewart, Donald K.	Ballston Spa, N. Y.
Strong, David J.	Amherst
Taylor, James A.	North Andover
Thompson, Felix	Deerfield
Thorpe, Lloyd	Hudson
Vautrain, John	West Hartford, Conn.
Welsh, Jack W., Jr.	Des Moines, Ia.
West, George W.	Hamilton, Bermuda
Williams, Robert M.	Wauconda, Ill.
Wisniewski, Martin	Newport, R. I.
Wood, Harold K.	Amherst
Yesberger, Earl F.	North Olmsted, Ohio

SUMMARY OF SHORT COURSE ENROLLMENT

	Men	Women	Total
Stockbridge School of Agriculture:			
Second year	95	3	98
First year	133	13	146
Winter School, 1936	75	11	86
Summer School, 1936	67	74	141
Specials	2	–	2
Totals	372	101	473

GRAND SUMMARY OF STUDENT ENROLLMENT

	Men	Women	Total
Graduate School	204	71	275
Undergraduate School	784	291	1,075
Stockbridge School	229	16	245
Summer School	67	74	141
Winter School	75	11	86
Specials	5	4	9
Totals	1,364	467	1,831

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Agricultural Economics and Farm Management	36
Agricultural Engineering	30
Agronomy	32
Animal Husbandry	33
Bacteriology	50
Beekeeping	59
Botany	52
Chemistry	54
Dairy Industry	35
Drawing	46
Economics	66
Education	69
English	74
Entomology	57
Floriculture	42
Forestry	43
French	77
Geology	61
German	78
History	72
Home Economics	39
Horticultural Manufactures	44
Horticulture	47
Landscape Architecture	46
Languages and Literature	74
Mathematics and Civil Engineering	62
Military Science	83
Music	79
Olericulture	48
Philosophy	71
Physical Education	80
Physics	64
Physiology	51
Plant Breeding	50
Pomology	48
Poultry Husbandry	38
Psychology	70
Sociology	73
Spanish	78
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Gifts and Bequests

For the information of those who may wish to make a gift or a bequest to this College, the following suggestion is made as to a suitable form which may be used.

There are a number of worth-while activities of the College which are handicapped by lack of funds and for which small endowments would make possible a greater measure of service to our students and to the Commonwealth. The religious work on the Campus is an example. This is now carried on in a very limited way by current private contributions. Further information concerning this and other activities in similar need will be gladly furnished by the President.

Suggested Form

"I give and bequeath to the Trustees of the Massachusetts State College, at Amherst, Massachusetts, the sum of.....dollars."

(1) (Unrestricted)
"to be used for the benefit of Massachusetts State College in such manner as the Trustees thereof may direct."

or (2) (Permanent Fund: income unrestricted)
"To constitute an endowment fund to be known as the..... Fund, such fund to be kept invested by the Trustees of Massachusetts State College and the annual income thereof used for the benefit of the College in such manner as the Trustees thereof may direct."

or (3) (Specific Purposes)
"to be used for the following purposes,"

(Here specify in detail the purposes.)

MASSACHUSETTS STATE COLLEGE

REPORT NUMBER

OF THE

STATE COLLEGE BULLETIN

THE REPORT OF THE PRESIDENT AND OTHER OFFICERS OF ADMINISTRATION FOR THE YEAR ENDING NOVEMBER 30, 1936, IS A PART OF THE SEVENTY-FOURTH ANNUAL REPORT OF THE MASSACHUSETTS STATE COLLEGE AND AS SUCH IS PART I OF PUBLIC DOCUMENT 31. (SECTION 8, CHAPTER 75, OF THE GENERAL LAWS OF MASSACHUSETTS.)

STATE COLLEGE BULLETIN
Amherst, Massachusetts

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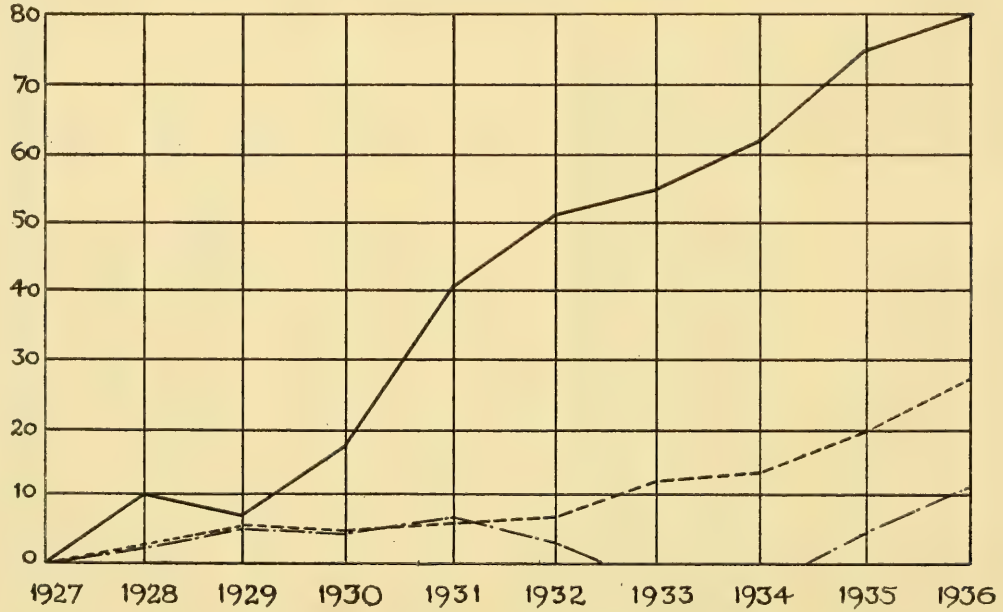
3500. 3-'37. No. 217.

STUDENT ENROLLMENT AND TEACHING STAFF COMPARED WITH STATE AND FEDERAL APPROPRIATIONS FOR RESIDENT INSTRUCTION—1927–1936



806 Students
100 Teachers
$493,988.80

1454 Students
80% increase
since 1927

126 Teachers
26% increase
since 1927

$547,405.91
11% increase
since 1927

NOTE: Student enrollment includes only those in full year courses. Summer School and other Short Course Students are excluded.

Appropriations include only State and Federal funds applied towards salaries and maintenance of resident instruction and exclude funds for Experiment Station, Extension Service, Plant Operation, etc.

THE TRUSTEES

Organization of 1937

Members of the Board

	Term Expires
Mrs. Lena Edge Wilson of Pittsfield	1938
Harold L. Frost of Arlington	1938
David H. Buttrick of Arlington	1939
David J. Malcolm of Charlemont	1939
John F. Gannon of Pittsfield	1940
Davis R. Dewey of Cambridge	1940
Joseph W. Bartlett of Boston	1941
Philip F. Whitmore of Sunderland	1941
John Chandler of Sterling Junction	1942
Frederick D. Griggs of Springfield	1942
Nathaniel I. Bowditch of Framingham	1943
William C. Monahan of Framingham	1943
James T. Cassidy of Boston	1944
Mrs. Elizabeth L. McNamara of Cambridge	1944

Members Ex Officio

His Excellency Charles F. Hurley, *Governor of the Commonwealth.*
Hugh P. Baker, *President of the College.*
James G. Reardon, *Commissioner of Education.*
William Casey, *Commissioner of Agriculture.*

Officers of the Board of Trustees

His Excellency Charles F. Hurley of Cambridge, *President.*
Nathaniel I. Bowditch of Framingham, *Vice-President.*
Robert D. Hawley of Amherst, *Secretary.*
Fred C. Kenney of Amherst, *Treasurer.*

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Massachusetts State College

REPORT OF PRESIDENT TO THE BOARD OF TRUSTEES FOR YEAR ENDING NOVEMBER 30, 1936

I. The following report on outstanding activities and accomplishments of the past year covers what I am calling my fourth year at Massachusetts State. As each year passes, it seems as if it had gone a little more rapidly and had been a little more strenuous than the previous year. While the past year has gone rapidly and has been a strenuous one, yet I feel that it has been a year of progress and accomplishment for the College.

While there has been some growth during the past year in the size of the student body, in the personnel of the staff, and in plant, the important phases of the growth, it seems to me, have been those which had to do with improvement in personnel, improvement in spirit and morale of students and Faculty, and in the friendly understanding of the work of the College through the State.

II. Personnel Changes at the College

During the year there have been changes both in the Board of Trustees and in the staff.

Soon after the opening of the year, His Excellency, Governor James M. Curley, reappointed Mr. Nathaniel I. Bowditch of Framingham as a member of the Board. Upon the completion of the present term of Mr. Bowditch in 1943, he will have been a member of the Board 47 years. This long service is outstanding in many ways. It is probable that Mr. Bowditch is the Dean of Trustees of state-supported colleges and universities in the United States, both in years and in effectiveness of service. At the time of the reappointment of Mr. Bowditch, His Excellency, the Governor, appointed Mr. William C. Monahan of Framingham to the Board in the place left vacant by the expiration of the term of Howard S. Russell. Mr. Monahan was many years a member of the staff of the College and his splendid contributions through the years to the upbuilding of the poultry industry of the State are recognized throughout the State. We are confident that Mr. Monahan will make a fine contribution to the work of the College during his service as a Trustee.

Though the appointment of the two new Trustees who are with us today come in the year following that for which this report is being made, it is more than fitting that I should express to these new Trustees cordial welcome and appreciation of their willingness to give of their thought and time in service to the Commonwealth and the College. As the older members of the Board of Trustees know well, it is the desire of the Administration of the College to have all of the Trustees thoroughly well informed of all of the activities of the College and, particularly, what is going on in the work of the College from month to month. I shall appreciate greatly if our new Trustees and the older Trustees as well will visit the College periodically so that the Administration may have the opportunity of discussing problems with which the College is confronted and that we may keep you informed of the ever changing operations of a growing College.

Changes in Staff

During the year, six members of the professional staff of the College resigned and two members retired. Those who resigned to accept positions elsewhere were: Dr. Harry R. DeSilva, Professor of Psychology; Dr. Charles S. Gibbs, Research Professor of Veterinary Science; Melvin H. Taube, Professor of Physical Education; Ronald L. Mighell, Assistant Research Professor of Farm Management; Ralph W. Phillips, Instructor in Animal Husbandry; and Paul D. Isham, Instructor in Horticultural Manufactures. Miss Evelyn A. Beaman, Instructor in English, resigned to be married.

Professor Fred C. Sears, Head of the Department of Pomology, and Professor Fred W. Morse, Research Professor of Chemistry, retired after long and distinguished service at the College and were elected Professors Emeritus by your Board.

Mr. Sears first came to the College as Professor of Pomology in 1907 and during the 29 years of his service here as teacher and administrator, he gave a splendid leadership to the development of instruction and investigation in his particular field, which has made the Department of Pomology at this College outstanding in its service to students and fruit growers.

Professor Morse came to the College in 1910 as Research Chemist in the Experiment Station and has given 26 years of valuable study to the problems of agriculture in the field of Chemistry. Upon several occasions he served as Acting Director of the Experiment Station. His publications have added significant knowledge to the field of Agricultural Chemistry.

III. Important Events of the Year

The Campus and College facilities continue to be used by a growing number of people for educational meetings and conferences of various sorts. Again in 1936 more than 50,000 persons used the facilities of the College for such gatherings in addition to those who were regularly enrolled in the various academic courses. For the first time, the Massachusetts Federation of Women's Clubs held its conference at the College bringing to the Campus nearly 1,000 women from practically all sections of the State. Farm and Home Week, the Student Horticultural Show and the Recreation Conference are important annual events which were successfully conducted in 1936, attracting the usual large number of visitors to the Campus.

The Sixty-Sixth Commencement

The exercises of Commencement were again held out-of-doors in the beautiful Rhododendron Garden and appeared to be successful in every respect. It is estimated that 2,500 people attended the graduation exercises in the Garden which is an indication of the ability of the College to handle a large audience in this out-of-doors auditorium.

The principal address was delivered by Dr. Francis D. Farrell, President of Kansas State College, and a prominent educator in the ranks of the Land-Grant Institutions. Mr. Nathaniel I. Bowditch, Vice-President of the Board of Trustees, presented diplomas to 268 candidates—228 recipients of the degree of Bachelor of Science and 2 recipients of the degree Bachelor of Vocational Agriculture. The degree Bachelor of Landscape Architecture was conferred upon 1 candidate, the degree Master of Science upon 35 candidates and the degree Doctor of Philosophy upon 2 candidates.

Dedication of Women's Athletic Field

After three years of intermittent work under several Federal Emergency Relief and Construction programs, a splendid new Women's Athletic Field was completed and appropriately dedicated on October 23, 1936. This project was conceived by Professor Curry S. Hicks, Head of the Division of Physical Education, and with characteristic energy and perseverance, he supervised its progress during the long period of its construction. The field now provides much needed outdoor athletic facilities for our 300 women students.

At the dedication exercises, all women students of the College participated in an interesting and instructive pageant directed by Mrs. Adeline E. Hicks, Head of the Department of Physical Education for Women. The pageant symbolized the whole history of the construction of the field, illustrating the many handicaps which were met and overcome. Mr. Paul Edwards, Acting Administrator for Massachusetts of the Works Progress Administration, presented the field and Mrs. Lottie A. Leach, Trustee, accepted it for the College.

C. H. Fernald Memorial Program

In connection with a conference of Connecticut Valley Entomologists held at the College on October 16, 1936, a dignified and interesting program was presented commemorating the service of the late Dr. C. H. Fernald of this College to the development of entomological science. Representatives were present from 60 colleges and experiment stations of this section and Dr. Fernald's outstanding service was reviewed by H. T. Fernald, Professor of Entomology Emeritus, Orlando, Florida; A. F. Burgess in charge of Moth Control, U. S. Bureau of Entomology and

Plant Quarantine, Greenfield, Massachusetts, and E. P. Felt, Entomologist in charge of Bartlett Tree Research Laboratories, Stamford, Connecticut.

Joint Conference—Trustees of College and County Extension Services

One important conference held this year for the first time was the joint meeting of the Trustees of the College with the Trustees for County Aid to Agriculture, the Trustees of County Agricultural Schools and County Extension Agents for the consideration of problems of mutual interest affecting the Extension Service in the Agriculture and Home Economics of the Commonwealth. Representatives were present from all of the County Extension Service organizations and the County Agricultural Schools—both Trustees and County workers as well as College Extension and Administration staff members. The problems affecting the Extension Service were presented by representatives of the various groups present including Mr. F. A. Upham, President of the Massachusetts Association of County Trustees for Aid to Agriculture; Mr. Allen S. Leland, Agricultural Agent for Hampshire County; Mr. Munson, Director of the College Extension Service, and the President of the College. Related agricultural programs of the College were described by Professor V. A. Rice, Head of the Division of Agriculture, and Professor George L. Farley, State 4-H Club Leader. There was profitable discussion of programs and plans and this conference seemed to establish itself as a significant part of our whole broad program of Extension Service in Agriculture and Home Economics in the Commonwealth.

IV. Increasing Interest in Scientific Research at the College

In my report of last year, I discussed briefly the growing interest of the entire staff in research. Stating in part, "Impetus has been given research work on the Campus during the past year through the action of the Sigma Xi Club, made up of some 30 members, in making application for a Chapter of the Honorary Society of Sigma Xi. A Committee of the Club, after making a most thorough study of research on the Campus, prepared a report of approximately 90 pages telling in a very effective way the story of the progress of research at the College, of facilities for research, and accomplishment in research." I am happy to report progress in the efforts of the Sigma Xi Club to secure a Chapter of the Honorary Society of Sigma Xi. As a result of the application, the Society appointed an official visitor and this visitor, Dr. George Howard Parker of Harvard, spent a day at the College during the fall and we believe was impressed by the research activities of the College. While the Honorary Society of Sigma Xi moves slowly always in accepting new Chapters, we have every reason to believe that within the next year or two the College will be granted a Chapter.

Referring again to my report of last year, may I quote further reference to research on the Campus as follows: "A second impetus to research on the Campus has been the receipt during the year of numerous gifts from individuals and industrial concerns of funds for industrial scholarships and for special research projects. During the year 8 industrial scholarships were awarded, largely to graduate students, amounting to $2,871.41. Furthermore, during the year approximately $50,000.00 was received by the College from the FERA and WPA to carry on research work." The College has again this year received gifts from a number of industrial concerns for industrial scholarships and for special research projects. There have been 9 such industrial scholarships awarded, amounting to $6,355.67. While the College has not received as large a sum this past year from Federal Emergency agencies for research work, it continues to have such work supported from certain Federal agencies.

It would be well again to emphasize that these special incentives and special funds for research which are of importance are not comparable in any way to the importance of the regular research projects being carried on under the able direction of Director Fred J. Sievers of the Experiment Station. This past year approximately 63 projects, supported in large part by Federal Funds, were underway at the College, at the Waltham Field Station, and at the Wareham Cranberry Station. The continued interest of the groups served by these sub-stations is significant and very helpful.

During the past two years, in discussing at meetings of the Cabinet and at meetings of Heads of Departments the stimulation of research work, particularly by members of the Resident Teaching Staff, the interest shown was so great that a special Faculty Committee on Aids and Grants for Research Work was set up with Dr. Clarence E. Gordon, Head of the Division of Physical and Biological Sciences, as Chairman. The purpose of this Committee was to contact all of the several agencies and foundations in the country which make grants for scientific aid for the purpose of bringing to the attention of these agencies and foundations the work of this College and its needs for assistance in research. This Committee has done an unusually fine piece of work in developing working contacts with outside agencies. Out of the work of this Committee there came the suggestion that it would mean a great deal in securing help from outside agencies if the College itself would evidence its concern and its support by setting aside a small sum to aid research projects on the Campus. After discussion with Administrative Officials, the sum of $200.00 was set aside from State Funds to be used under the direction of this Committee. This fund was used in an unusually worth while way and later a report will be made to your Board on the use of the fund and the results accomplished.

For a number of years students in Science in the state-supported colleges and universities of the Connecticut Valley have held annual student scientific conferences. The increased interest of the entire staff in research has been very helpful in stimulating the interest of students of the College in these student scientific conferences. During the year we were fortunate in having at the College the annual student scientific conference of the Connecticut Valley. It brought to the College a large number of students from Dartmouth, Williams, Amherst, Wesleyan, Connecticut State, Springfield and the International College. This conference was particularly helpful in focussing the attention of the entire student body on research, particularly in the field of science. This interest is being evidenced by an active committee of the student body which is preparing for the forthcoming student scientific conference which will be held at the Connecticut State College.

V. Program of Religious Advisory Council

Fully convinced that the College is not justified in maintaining a "hands off" attitude towards religious activities by ignoring the spiritual side of the student's life, the Administration has placed the direction of the organized religious work with and for students in charge of a Religious Advisory Committee. This Committee, appointed by the President, is composed of members of the Faculty who represent the Catholic, Jewish and Protestant groups. They in turn are assisted by an Advisory Board of clergy and laymen representing all faiths, but not in any way connected with the College officially.

A Student Director of Religious Education directly responsible to the Faculty Council on Religious Education and employed by them is in direct charge of all religious work on the Campus. The salary of the Director is paid entirely from monies appropriated by two Church Boards of Education supplemented by contributions from interested friends and parents. The budget required for the activities and programs, whether of a formal or informal nature, is raised through subscriptions from parents and friends and through a small student tax voted by the students themselves. Neither State Funds nor money paid by students is used for the salary of the Director.

All work with students, either individually or in groups, is strictly non-sectarian in character. Students are strongly encouraged to worship in the churches of their particular denominations.

Four religious organizations are active on the Campus: the Christian Federation, the Menorah Club (for Jewish students), the Newman Club (for Catholic students), and the Stockbridge "Y" (for two-year students). These four organizations unite to form the Student Religious Council which strives both to further amity among the religious faiths and to promote religious activity and thinking in the student body.

Hence, a student who desires to develop his spiritual life has ample opportunity to do so by fitting himself into the program offered him for voluntary participation.

The Student Director does much effective work as adviser to the various religious groups. He assists them in planning programs, organizing discussion groups and securing leaders and speakers. He also arranges for meetings in fraternities and

has numerous conferences with students who seek his help on personal problems. In these intimate relations he does his most serviceable work. Once a year, usually in the second semester, he directs an intensive period of religious meetings under the leadership of some outstanding man of national reputation. All the religious organizations unite in this intensive period of concentration on some religious or social problem. During the past four years these leaders from the outside who have come for a week of service at the College have been:

November, 1932—Rev. Bernard C. Clausen of Syracuse.
December, 1933—Father M. J. Ahern of Weston College.
February, 1935—Dr. Charles S. Gilkey of the University of Chicago.
February, 1936—Rabbi Milton Steinberg of New York City.

In February, 1937, we shall have with us Rev. Robert J. Hewett, S.J., of Weston College.

Since the discontinuance of compulsory Sunday chapel, the Student Director has been in charge of a weekly Vesper Service held every Sunday evening at five o'clock. Attendance at this service is entirely voluntary. These services are devotional in character and are addressed by outstanding preachers of various denominations. In spite of the fact that they have had to be held in Memorial Hall, a place not well suited for the purpose, the average attendance of Faculty and students has been well over one hundred. After the restoration of the Old Chapel has been completed the Vesper Services will be held in an atmosphere that is more inspiring and challenging.

In an effort to interest the Faculty in the importance of religion on the Campus, Professor William Ernest Hocking of Harvard was invited to address them on "What Place Can There Be For Religious Teaching in our Colleges". His able discussion of the topic on Sunday, January 12, 1936, was well received. Another meeting which commanded an attendance that more than filled Bowker Auditorium was held on April 23, 1936, under the auspices of the College and the Massachusetts Federation of Churches. The speaker was Toyohiko Kagawa, the famous Japanese statesman and Christian organizer.

VI. Contribution of the College to Education by Radio

The use of a radio as a vehicle for public education is becoming more and more general and this College has enthusiastically embraced this modern teaching method.

Under the auspices of the College Extension Service, five regular programs in Agriculture and Home Economics are broadcast each week from various radio stations in the Commonwealth. In addition, numerous special broadcasts are made from time to time. Regular contact is maintained with nine Massachusetts' stations, and WGY of Schenectady, New York. There is a very distinct public reaction to these broadcasts, which indicates to us that the programs are heard and that their influence is felt. For example, in the month of November, 1,190 requests for special information were received at the College as a result of radio programs.

The College was invited by the Federal Department of Agriculture to take a place in a series of Land-Grant College programs over a national hook-up and in accordance presented a full hour's program to a national audience in June, 1936. There was a very widespread and favorable response to this program which was probably the most extensive public contact ever made by the College through any single event.

In November, in connection with the annual Alumni Night program throughout the country, the College broadcast a special program through the facilities of WBZA of Springfield. The broadcast was from the main dining room of the Hotel Kimball where local Alumni were gathered for their annual banquet. The program featured a very excellent student band and elicited an extremely cordial response.

We recognize in the radio a very effective and inexpensive means for projecting our educational service and are planning to take advantage of it in every reasonable way. For example, by special invitation from radio station WSPR, we are planning a series of educational broadcasts—one purpose of which will be to ascertain, if possible, what types of programs can be broadcast to the best advantage and what methods of presentation are most effective.

VII. The Participation of the College in Flood Relief in the Commonwealth

You are familiar with the prompt way in which the College made its plant and staff available to the flood sufferers not only in the Connecticut Valley but in the Merrimac Valley, and wherever injury and trouble resulted from the floods of last spring. When it became necessary to evacuate residents of neighboring valley towns, the facilities of the College were made available. Nearly 200 flood sufferers were housed in the Cage of the Physical Education Building, and our limited Infirmary facilities were taxed to the limit. These refugees were fed through the College Dining Hall and both Faculty and students volunteered every help possible even to the offering of entertainment through reading and taking care of children. As rapidly as possible, and through other state agencies and the Red Cross, the refugees housed in the Physical Education Building were evacuated, but the Infirmary was required to care for a number of people for some time after the entire group in the Physical Education Building had been evacuated to their homes; in fact, one of the refugees died in the College Infirmary. The College was very happy to make its plant available for these sufferers and that its efforts were appreciated was evidenced by the letters received from the Selectmen from the towns where assistance was given and from individuals.

Before the flood waters had receded, the technical staff of the Extension Service and from the Departments in the Divisions of Agriculture and Horticulture were in the field and in many cases these men worked night and day in the examination of lands and in giving assistance to individual farmers in planning for rehabilitation of the land and for the planting of crops, etc. Quantities of seed and food were sent to the laboratories at the College for examination to determine extent of damage done, whether foods could be safely used, etc. Waters from wells in flooded areas were tested in the Department of Bacteriology and Physiology and this work continued for weeks after the flood waters had disappeared. Reports on the work of the Extension Specialists in Agronomy, Animal Husbandry, Horticulture and Home Economics were prepared and some of these reports were put into your hands soon after the flood emergency passed. The technical assistance given, particularly as to the handling of flooded lands, was recognized by the leaders in Agriculture and Horticulture in other Land-Grant Colleges of New England and by the Agricultural press as being not only sane and practical, but of the soundest technical character. All of this work by our technical staff was done not only in the most efficient way, but was done quietly and without thought of recognition and, of course, was done without expense to the flood sufferers.

Besides the excellent use made of the college plant and the fine service rendered by the technical staff of the College, there was a service given that meant a very great deal to the families of flood sufferers in the way of developing courage and morale to go forward in the rehabilitation of farm homes. The women of the Extension Service staff, almost without exception, and the women engaged in the teaching of Home Economics in the College went out immediately following the disappearance of flood waters and counseled with the farm women as to the rehabilitation of their homes. They went further and assisted in securing and distributing clothing and food. This last work was done in cooperation with the Red Cross and numerous other agencies which contributed so much to the rehabilitation of the flooded areas.

The report on the part which the College played in the state-wide program for flood relief would not be complete without reference to the conference which the College called within a few days after the flood had occurred. So little seemed to be known as to the actual damage from the flood to the farm areas of the Connecticut and Merrimac Valleys and so many different agencies were offering every possible help in the rehabilitation of the flooded areas that it seemed wise to bring together the agricultural leaders of the State to discuss the whole situation to see if there could be developed a clearer picture of the damage done and an effective coordination of the efforts being made for rehabilitation. Representatives were invited from the various agricultural organizations, State Departments, County Extension Services, the press, the Red Cross, to a conference at the College on Sunday, March 29. A very successful meeting attended by approximately 200 representatives was the result.

VIII. Proposal of the State Federation of Labor that the College Undertake Instruction in Engineering

The Charters from the Federal and State Governments under which the College is operating and to which reference has already been made seem to indicate that the College is obligated to carry on instructional and research work in mechanic arts. In a number of the other and larger Land-Grant Colleges the phrase as to mechanic arts in the Morrill Act and in State Acts has been interpreted to mean the development of work in Engineering equivalent to that done in the fields of Agriculture and Home Economics. At certain of the other Land-Grant Colleges, particularly at the Iowa State College, the Michigan State College and the Pennsylvania State College, which have been developed as separate colleges; that is not part of state universities; the mechanic arts provision has been accepted as meaning not only departments but Schools of Engineering. At the Pennsylvania State College not only was there developed, many years ago, a School of Engineering, teaching the usual lines of Engineering, such as Civil, Mechanical, Electrical and Chemical, but because of the mining of coal and other minerals in Pennsylvania, there has been developed a School of Mining Engineering. The Schools have been supplemented in a number of cases by Engineering Experiment Stations.

It has been assumed in this Commonwealth, and rightly so, that the teaching of what might be indicated as Professional Engineering was developed within the meaning of the Land-Grant College Act at the Massachusetts Institute of Technology. This is more than an assumption because when the Morrill Act of 1862 was accepted by the Great and General Court of the Commonwealth, a portion of the income of the funds under these original Acts was diverted from this College to M.I.T. Since the income of the two original Acts was made available, this College has received two-thirds and M.I.T., one-third of the income of these funds. However, there is nothing in the Organic Act, as passed by the Great and General Court of the Commonwealth in 1863 which is in any sense different from the Acts under which the Land-Grant Colleges, referred to above, have developed Engineering instruction and research. In other words, there is just as much authority under the two legislative acts which brought this College into existence for the mechanic arts as there is for Agriculture and other fields of work. Recognizing this, the College has for more than fifty years indicated its Department of Mathematics as a Department of Mathematics and Civil Engineering. Furthermore, a number of years ago the College organized a Department of Agricultural Engineering in the Division of Agriculture. Both of these Departments are well staffed and Engineering has been taught as it seems to have been needed in the work of the College, though there has never been an attempt to teach Engineering on a professional basis. With the splendid Engineering Schools and Colleges in the privately endowed institutions of the Commonwealth, particularly those at M.I.T., Harvard, Tufts, and Worcester Polytechnic, there is no need at the present time, and probably there never will be need, for the teaching at this College of what might be indicated as professional engineering courses.

Two years ago, I brought to the attention of this body the situation as to the teaching of Engineering and was authorized by you to gradually bring about certain changes that would eliminate duplication of work and bring about more effective teaching of fundamental work in Engineering. The authority which you gave me was given with the understanding that when final changes were worked out they would be presented to you for consideration and action. Studies are still underway for the teaching of Engineering at the College and it is my hope that I may be able to present a plan to you during the coming year that will simplify and strengthen our situation without increasing our obligations or without thought of developing professional work in Engineering.

Acting entirely upon its own initiative and sponsored largely by the Central Labor Union of Holyoke, the Massachusetts Federation of Labor appointed a special committee to investigate and report upon the possibility of establishing engineering education as a part of the curriculum of the Massachusetts State College. This Committee sought a conference with the Administrative Officers of the College which was arranged in May, 1935. They asked specifically what steps needed to be taken to provide the engineering instruction in which they were interested. We

outlined the work which we are already giving, indicating that the first two years of the work at the College is now of much the same character as the first two years in undergraduate Engineering Schools, such as Tufts or Worcester Polytechnic. This Committee emphasized the fact that they are convinced that the Engineering Schools in privately endowed institutions are more or less closed to the sons of artisans because of expense. They feel that if the State is providing an education in agriculture for certain citizens of the State, that provisions should be made also for under-graduate fundamental training in Engineering for the children of the industrial group. This Committee indicated that they would like to do something definite in the way of carrying out their plans and it was finally suggested that it would be desirable for them to secure legislative action. As a result of their report to the State Federation of Labor at its annual meeting in 1935, the Federation introduced a bill in the last session of the Great and General Court and this bill was heard before the Committee on Agriculture and the Ways and Means Committee, but did not receive favorable action by the Legislature.

During the past fall, the Labor Committee has again called at the College and in the conference which they requested, informed us that they proposed again to introduce a bill calling for the teaching of fundamental work in Engineering at the College. This statement as to the interest of labor in the teaching of undergraduate work in Engineering at the Massachusetts State College is made to emphasize the fact that the College did not and has not agitated this development, though it has felt obligated to meet the representatives of the labor interests in the same cordial way that it would meet representatives from any other group in the State. The Administration of the College has felt that it was wise in emphasizing the necessity for legislative action so that there could be no question as to authority for such work. There is probably now no question as to authority under the Act passed originally by the Legislature in 1863 but we have felt that if there is development in undergraduate work in Engineering at the College, it should be thoroughly understood, particularly by the Legislature of the Commonwealth. It is understood, that the Central Labor Union of Holyoke and the State Federation of Labor will press more aggressively this year for the enactment of their bill.

As indicated above, there is no question but what the College is now teaching in its first two years courses which would be considered not only fundamental but sufficient as foundation work in any of the recognized Engineering Schools of the country. Should the State Federation of Labor secure passage of its bill, it would not mean adding greatly at the present time to the staff or to the student body. It is, of course, impossible to add greatly to the student body at the present time because of lack of suitable facilities and housing and it has been my belief, and still is, that we should not allow too rapid growth in the student body. Should undergraduate work in Engineering be required of the College it would mean, during the first two or three years perhaps, a half-dozen additional instructors and in time would require a building.

IX. Development under Bankhead-Jones Funds

The Federal Bankhead-Jones Act of 1935 provided for increased Federal support of the Land-Grant Colleges and Universities in the fields of Resident Instruction, Research and Extension education, a sum increasing annually for five years and amounting to $34,000,000 at its maximum. The allocation of this amount to the various states is based upon several population factors varying in the three services to which the aid is given. Under the provisions of this Act, this College received in the first year—1935–36—the following Federal appropriations (in round figures): For Resident Instruction, $20,000.00, for Extension Service at the College, $21,000.00, for Experiment Station, $4,500.00. If Congress continues to provide the annual appropriation contemplated under this Act, these amounts will increase until in 1938–39, and the College will receive for Resident Instruction approximately $72,000.00, for Extension Service, $21,000.00, and for Experiment Station, $18,000.00. It is the present plan merely to replace other Federal appropriations for the Extension Service with Bankhead-Jones Funds so there will probably be no further net increase in Federal Funds under this Act for the Extension Service.

The basic principle which has guided the Administration in the application of these funds to our services has been to use them to meet the more urgent needs of

our teaching and research programs as these have existed for some time. The large increase of Federal activities in the field of Agriculture has placed many additional responsibilities upon our Extension Service and Experiment Station which these Federal Funds have enabled us to meet in a more satisfactory manner. Large increases in student enrollment during the last six years have placed heavy teaching burdens upon many of our Departments and these have been alleviated by new appointments made possible by these Federal Funds. In all, 15 new teaching positions have been established under these funds in the Departments of Agronomy, Forestry, Horticultural Manufactures, Vegetable Gardening, Chemistry, Zoölogy, Mathematics, Physics, Economics, English and Physical Education. They have, also, made possible the broadening of our field of work into the new fields of Recreation and Wildlife Management wherein there has been a large and increasing demand for service from the College.

The use of these Federal Funds for Resident Instruction is somewhat restricted in the same manner as are those provided by the Second Morrill Act of 1890, which specifies that these funds may be "Applied only to instruction in agriculture, the mechanic arts, the English languages and various branches of mathematical, physical and natural and economical sciences with specific reference to their application in the industries of life." The Federal Office of Education has interpreted the Act to mean that these funds may not be used for the salaries of instructors in Philosophy, Psychology, Ethics, Logic, History, Civil Government, Pedagogy, Military Science and Tactics and in Ancient and Modern Languages except English. Neither may they be used for the salaries of administrative officers, laborers, clerks, etc., for the lighting or heating of buildings nor for a considerable variety of supplies and equipment specified by the Department.

It has been our practice in the application of these funds for Resident Instruction to use them almost wholly for the salaries of members of the teaching staff and it is our plan to study carefully the most urgent needs which we see facing the Institution in the years ahead that these increasing funds may be applied to meet those needs in the most effective manner. I feel that we have now reached a point where the further use of these increasing funds may be applied to extending the services of the College and it is my purpose to bring to your Board specific plans for their use in this manner as these are developed. It should be stated that it is the purpose of the Federal Legislation and the Federal Office of Education that these funds shall be used for new work in the colleges and shall not be used as a substitute for financial support previously supplied by the State or from other sources.

X. A Growing College with Increasing Obligations and Opportunities

The past year has again witnessed increasing pressure from the parents of boys and girls living within the Commonwealth for the entrance of these young people to the College. After going through four years of experience with this annual drive, as it might be called, to increase the student body of the College, it is my belief that the pressure will continue and perhaps increase with the passing of the years.

Your body authorized the Administration of the College some five years ago to limit the entering class to approximately 300 students. This number has been divided by the Administration so that the College has been admitting around 225 men and 75 women each fall. I say 'around' because pressure has been such as to cause us to run over these figures each fall with the result that our freshman class has numbered approximately 325 students. It seems wise to continue this restriction and, therefore, I am not asking your body to change its action at this time. It is interesting to note that the pressure for admission of women is proportionately greater than for men. This does not mean that there is a falling off in interest on the part of the young men of the State in the work which the College has to offer; rather it means that the people of the State are beginning to appreciate the fact that this College is a very satisfactory place for daughters as well as sons. What has been said as to increased pressure for entrance from women does not mean that there is any thought of changing the present ratio of men and women in the student body or any necessity for it. In a number of the larger Land-Grant Colleges of the Middle West, the proportion of men and women has come gradually to be approximately 50%.

Not only is there pressure for entrance to the undergraduate work at the College, but a very interesting development to me has been the gradual increase during the past four years in the number of men and women in the Stockbridge School of Agriculture, our two-year vocational course in Agriculture. Perhaps this increase is based upon the fact that throughout the period of the depression each year found practically every graduate of the School in a satisfactory job. This, of course, was not true of the graduates of the four-year courses. There has come, also, a slight increase in the number of applicants for advanced degrees. I had rather felt that registration in our Graduate School during the depression would increase and then perhaps fall off somewhat as we came into better times. However, there is no evidence of a falling off in registration and it is probable that the number of students enrolled for advanced degrees will remain around 140 each year.

The difficulties in the problem which we are facing as a result of increased student body have been presented to your group from year to year over the past four years. The receipt of somewhat increased Federal Funds has helped to meet in part the great need for an increased staff. So, too, with the construction of the Goodell Library and Thatcher Dormitory under Federal Funds and the completion of the reorganization of the Old Chapel to be used as headquarters for Social Science, the physical plant has been much bettered. We are still suffering from growing pains but I am confident that if we can keep the numbers of students down to the average of the past four years, that we shall gradually be able to get our work onto a better basis, both as to teaching and research.

Along with the increased load on the entire college organization, resulting from steady increase in student body (and it is my opinion that our staff, generally, has welcomed this increased load), there has come without any stimulation on the part of the College itself a greatly increased demand for service of all kinds, both to people who live on the land and in rural communities and, I might add, increasingly from city dwellers. We interpret the College as being essentially a service institution for the Commonwealth of Massachusetts and that in the broad field of work envisioned by the Federal and State Charters for the institution.

Developments in the Field of Recreation

One or two of the more recent demands upon the College for outside service will be of especial interest to you at this time, I believe. You are familiar with the Annual Recreation Conference held at the College during the month of March. The first Conference, which was held in March, 1934, came about as a result of increased interest shown by groups of people concerned with both the social and economic implications of recreation, and in demands from individuals and communities throughout the Commonwealth for information and service along recreational lines. The purpose of the first Conference was to bring together, if possible, the leaders of all the various phases of recreation for the purpose of discussion of common problems and to see if a unified and effective program for recreation could not be worked out for the State. Each year since 1934 as the Conferences have been held, there has been increased interest. Last year there were more than 5,000 people in attendance at the various sessions of the Conference and at its exhibit.

Out of this Recreation Conference there have gradually been developing certain activities to meet certain very definite needs. You have passed favorably upon the simple beginning in teaching and research in Wildlife Management at the College. This new line of work has met with unusually cordial reception through the State, and the College has been fortunate in having the fine cooperation from the State Department of Conservation which has offered its physical facilities, assistance of its staff members, etc. There is no thought on the part of the College of building rapidly or largely in the field of Wildlife Management. The work is now a part of the work of the Department of Forestry, and the members of a number of other Departments in the College are giving able assistance. In developing the practical phase of Wildlife Management as a part of the program at the College, it would be exceedingly helpful if the area of the Mount Toby Forest, which is now approximately 750 acres, could be increased, or if, through gift or otherwise, a tract of 1,000 or 2,000 acres could be made available for both Forestry and Wildlife activities in the nearby Berkshire Mountains. With a College of Forestry in an adjoining state,

owning and controlling more than 20,000 acres for research and demonstration in Forestry and Wildlife Management, it would seem as if it should be possible, in a State which is proportionately more of a forestry state, that we might have in time from 3,000 to 5,000 acres of forest land for research and demonstration.

Not only because of what the College has been doing through the Recreation Conference, the Winter Sports Committee, etc., but because of the growing interest in recreation throughout this Commonwealth and the entire Northeast, there has come a very definite demand for trained recreational leadership. Last year a Committee of the staff was appointed to make a study of the needs for trained recreational leadership to see what contribution the College might make in such training. The Committee has made a very effective study and a brief report and recommendations are coming to your body through one of your Committees. I believe the College is in a strategic position to take leadership in the training of men and women who are to lead in recreational developments and activities and that without adding materially to the staff, physical equipment, or budget.

Finally, in this general field of recreational development, but particularly because of the increasing interest in nature study, we are proposing to open, with your approval, a very simple nature camp to be operated for a period of from four to six weeks on Mount Toby under the leadership of our own staff. The State Federation of Garden Clubs has been exceedingly interested in the possibility of the College offering a few weeks of nature study during the summer season and I am confident that the Federation will be very helpful as this work may be developed. Furthermore, it has come increasingly to us that the teachers of Biology in our public schools, while very proficient in teaching procedure, too often know but little about the out-of-doors. It is my belief that a nature camp on Mount Toby could be made a real contribution to the further training of men and women who are teaching Biology, particularly in our public school system. These various developments in the field of recreation belong so logically in the program of a Land-Grant College that some of you may wonder why there have not been developments along these lines during the past few years. When an individual or an agency is almost submerged with work it is, of course, not in a position to do as much effective thinking as might be expected and, certainly, cannot plan for and take on additional activities. As we are adjusting our increased load and becoming somewhat stabilized, we are in a position to look about us a bit more, to sense needs and demands and I am confident that what is proposed in the field of training for recreational leadership and nature study will become recognized as a very real contribution on the part of the College to more satisfying living on the part of all of the people of the Commonwealth.

Campus Planning

In the reports to your body of last year and the year before, I explained the setting up of a Campus Planning Council, made up of members of the staff, and of the helpful service of this Council whenever it becomes necessary to make a decision as to change in location of drives or walks, in tree planting, etc. It has been my hope that this Council would eventually produce a twenty-five year development plan for the Campus. Perhaps we shall be able to have such a plan developed by this Council within the next year or two.

Again in the matter of needed buildings, there has been rather full discussion of these matters in annual reports and in special reports to the Board through the years. In our budget askings of the present year we repeat items with which you are familiar for additional buildings and which we hope may be recognized in time by the Legislature. These special items are headed by a request for a Women's Building to cost $250,000. The second item is for $40,000 for the reorganization of South College, which is now used entirely as an Administration Building. While it would be very much more satisfactory to have an entirely new Administration Building, there are so many other buildings so much more important in the life of the College which the College must have soon that it has been my feeling that we could, at a rather moderate expense, reorganize South College so that it would take care of administrative needs for some little time. The buildings which are seriously needed before an Administration Building are: (1) A Women's Building to be the center of women's work on the Campus; (2) A Physics Building which

would be put up as the south half of Marshall Laboratory; (3) A New Heating Plant, which would include repair and paint shops and, particularly, a central garage; (4) A Vegetable Storage Building with small offices and one classroom, and finally (5) An Auditorium Building with an auditorium to seat at least 3,500 people. This last building could easily provide space for such limited fine arts as are being taught at the College.

As an important part of any discussion of the future development of the Campus and of any definite planning for future growth, there must be emphasized the need for some three or four additional pieces of land to round out in an effective way the present Campus holdings. This matter has been discussed with the Board several times and we were fortunate to secure a special item of $7,000 last year with which the College has now acquired the Tuxbury property of some 26 acres, lying immediately north of the area occupied by Thatcher Dormitory. This piece of land had been leased by the College for some 26 years for experimental projects in the field of Pomology. These projects will be continued and it should now be possible to crowd on certain other projects, perhaps in the field of Vegetable Gardening.

With the erection of new buildings, the extension of athletic fields, and the need for additional drill grounds for the cavalry unit, the farm area on the Campus and, particularly, certain areas which have produced annually considerable quantities of hay have been so encroached upon that there is now a very definite need for additional land, particularly for Experiment Station use. Though your body gave the College Administration authority to lease the Dickinson property of 50 acres lying immediately north of the Tuxbury property and though Mr. Dickinson was very ready to lease and the lease seemed satisfactory to your Board, yet the Chairman of the Commission on Administration and Finance advised strongly against consummating such a lease without legislative approval and, therefore, nothing further has been done to secure the use of the property. This property is so situated that it would round out very advantageously that portion of the Campus lying along the northeastern edge of the College property. With the Dickinson property, there are two other pieces, both of which have been discussed before the Board. The smaller piece is the so-called Powers property of 1 acre lying immediately south of the Mathematics Building and entirely surrounded by college-owned property. The second piece is that known as the Avery property lying on the ridge immediately south of the Clark Estate. While there are but 6 acres in this last property, it is so located that it would add greatly to the future development of the Clark Estate for the unit of Women's Buildings on the Campus. With your authorization, funds sufficient to buy the Dickinson, Powers and Avery properties were included as a special item in this year's appropriation. It will be tragic if provision is not made for the purchase of the Dickinson property as it is likely to be broken up into lots and when this happens it probably will never be available again to the College.

XI. Improved Teaching and Research in the Field of Agriculture

Teaching and research at the College in the field of Agriculture have improved and expanded substantially in recent years. That the Trustees may have a fuller understanding of the growing activities of this Division of our work, I am summarizing below the more important aspects of this activity. From this statement I am sure you will be impressed with the breadth of the program and the effectiveness with which it is being conducted.

The Division of Agriculture, as is probably well known to all of you, comprises the Departments of Agricultural Economics and Farm Management, Agricultural Engineering, Agronomy, Animal Husbandry, Dairy Industry and Poultry Husbandry. These Departments are housed in Stockbridge Hall, Flint Laboratory, the Agricultural Engineering Building and have, in addition, laboratories both at the Poultry Plant and at Grinnell Arena.

All three branches of the College's activities, research, extension and resident teaching, are represented in the Division of Agriculture. The present staff in Agriculture consists of 12 men in research, 8 in extension and 20 in resident teaching. Approximately 60 research projects are now actively being pushed in the Division of Agriculture, many of them by resident teachers. Research is being carried on in all six Departments of the Division and the most important problems facing

those engaged in agricultural pursuits in Massachusetts are being attacked. A sample project from each of the Departments is as follows:

Agricultural Economics
The Farm Mortgage Situation in Selected Massachusetts Counties

Agricultural Engineering
Brooding Equipment and Methods in Cooperation with Department of Poultry Husbandry

Agronomy
Absorption by Food Plants of Chemical Elements of Importance in Human Physiology and Nutrition

Animal Husbandry
Effect of High Concentrate of Vitamin A on Breeding Efficiency of Dairy Cattle

Dairy Industry
A Study of the Comparative Efficiency of Electrically Operated Tanks versus Ice in the Cooling of Milk

Poultry
Statistical Study of Heredity in Rhode Island Reds

Extension activities are carried on in all six Departments in the Division and last year the dairy program was unified by bringing together the Economic, Agronomic, Farm Management and Animal Husbandry phases of the dairy industry into one program. Some 20 odd study groups were organized in all the counties of the State and met regularly, weekly or bi-monthly. This program is being carried on again in a larger way through the present winter. Additional extension work in Engineering, Dairy Industry, Agronomy, Poultry and various Economic phases of the Agricultural Industry are also being handled in the Division of Agriculture. The campus for this group of extension teachers, of course, is the State of Massachusetts and literally hundreds of people are being reached yearly through the extension teachers' efforts. In addition many of the resident teaching members who have become particularly proficient in some particular phase of their field of endeavor also make numerous excursions out into the State for lectures and demonstrations. Where this can be done without in any way interfering with a resident teacher's classroom activity, we feel that it should be encouraged as it increases the service of the College to the State by just that much and also tends to keep the teacher in direct touch with problems in his particular field.

The resident teaching staff continues to carry on its many activities in a very efficient manner. The total number of students registered in courses being given in the Division of Agriculture at the present moment is 1,117. The actual number of students majoring in the Division at the present time is 415. This includes 80 4-year students; 127 2-year students; 7 graduate students; with the remainder made up of short course students in our greenkeepers' course and the poultry and dairy short courses. There is a splendid feeling of cooperation between all students in the Division of Agriculture no matter whether they are enrolled for one week, ten weeks, two years or four years. They are all here for a definite purpose and if any barriers ever did exist between the various groups they have long since disappeared. In fact, we often bring students of all the groups together for lecture periods and they all take part in the formation and activities of the Poultry, Dairy, Agronomy, and Animal Husbandry Clubs. The shift brought about last year which moved Agricultural Economics to the Division of Agriculture, is working out very satisfactorily and we feel it to be a distinct advantage both from the standpoint of research and extension as well as from the standpoint of resident teaching.

The number of students graduated from the Division of Agriculture has shown a slow steady increase over the past 20 years. Our graduates continue to enter all three branches of activity for which our work is designed to fit them; namely, the commercial, the professional and the productive fields. Our graduates established a record during the depression which, while it may not be unique, is probably quite different from that of many other institutions; namely, all found jobs immediately following graduation. Year after year 100% of our graduates in Agriculture have found an employer as soon as their work here at the College was finished.

The Division of Agriculture is just completing a motion picture, showing the activities of students in the Division of Agriculture as well as the activities of some of our graduates, and is planning to publish, in the near future, an attractive illustrated booklet entitled "Opportunities in Agriculture." By means of the pictures and the booklet we are looking forward to a steadily increasing enrollment in the Division of Agriculture in the firm belief that young men and women well trained in this basic industry will find a place in society awaiting them when college days have passed.

XII. Conclusion

Gifts

Two gifts have been made to the College during the past year of a character that will mean much in helping us to develop a right cultural atmosphere for our entire student body. The first of these gifts was made by Mrs. James J. Storrow of Lincoln, a member of the Women's Advisory Council, and a long-time friend of the College. This gift consisted of a valuable library of nearly 2,000 books, pictures, statuary and furniture. The library was of such a character that after its receipt at the College and with Mrs. Storrow's consent, it was placed in Thatcher Hall Library to be known as the Storrow Library of Thatcher Hall.

The second gift was made by an Alumnus of the College, Mr. Bernard H. Smith of the Class of 1899, of Brooklyn, New York, who has long been interested in efforts made at the College to develop music among the students. Mr. Smith's splendid gift was in the form of a ten-bell chime for the tower of the Old Chapel. The chime will be ready for installation even before the Chapel Building is entirely completed under plans now being carried out through the WPA, and will be an important addition to the cultural influences of the Campus.

In closing this report I should like to emphasize that there is on the Campus a harmonious working together of the various elements making up the life of the College with a spirit of friendliness and cooperation that is quite exceptional. It is seldom that it has been my good fortune to live and work on a Campus where there has been a finer spirit of friendly cooperation than there appears to exist on our Campus today in all of the groups making up the life of the College; trustees, faculty, students, alumni, parents of students and outside friends.

In all of this, I want you to know that there is a rather unusual feeling of appreciation on the part of both Faculty and students of what the Commonwealth has done, and is doing, for the College in making possible the steady upbuilding of a fine educational institution. It is my strong belief that our students are going out with a real appreciation of what the State has done for them in making possible four years of college work on this beautiful Campus. This should make our graduates better citizens and more than ready to return as they may, both service and loyalty to their home communities and the Commonwealth.

The past year has been one of loyal support to the College and its activities by the trustees of the College, by alumni, and by friends of the College generally through the State. We are fortunate in having such loyalty and in the spirit of that loyalty I want to pledge the interest and loyalty of student body and faculty to the further upbuilding of this College. Personally, I want to continue to pledge to you all that I have in maintaining the work of the College in such a way as will help to build it into the kind of a College it should be in its service to this fine old Commonwealth.

Hugh P. Baker,
President.

BUDGET ESTIMATES FOR 1937

The budget of the College for 1937 as approved by the Board of Trustees is indicated below.

General Maintenance

	State Funds		Federal Funds		Total
	Personal Service	*Maintenance*	*Personal Service*	*Maintenance*	
Resident Instruction					
Instruction	$287,391		$83,021		$370,412
Short Courses	56,250	$9,850	2,065		68,165
Department Maintenance	48,970				48,970
Farm	34,000				34,000
Travel		7,028			7,028
Supplies and Equipment		97,817			97,817
Administration					
Administration	59,315				59,315
Trustee Travel		1,200			1,200
Printing		1,300			1,300
Plant Operation and Maintenance					
Operating Maintenance	125,000				125,000
Heat and Light		65,000			65,000
Repairs		18,000			18,000
Replacements		20,000			20,000
Extension Service	77,722	34,000	79,473	$8,571	199,766
Experiment Station					
Experiment Station	114,426	19,000	89,830	9,261	232,517
Waltham Field Station	7,000	7,500			14,500
Control Services					
Fertilizer Law	12,750	3,650			16,400
Poultry Law	19,795	5,205			25,000
Milk Inspection Law	640	600			1,240
Seed Law	5,670	1,400			7,070
Dairy Cattle Cert.	5,700	3,300			9,000
Feedstuffs Law	10,790	2,350			13,140
Totals	$865,419	$297,200	$254,389	$17,832	$1,434,840

Special Appropriations, 1937

The Trustee Budget for special appropriations for 1937 includes twenty-four items totaling $431,225. The first five items are for construction or reconstruction of major buildings, the next three for important land purchase, the next ten for needed Campus improvements, two for road construction, two for extension of services to meet public demand and two for special and emergency needs.

I. BUILDING CONSTRUCTION

1. *Women's Building* $250,000

At the present time the work of the Division of Home Economics is carried on in seven separate buildings on the Campus, in laboratories which were originally constructed for other purposes and which have been adapted to this use as well as has been possible. Not only does the present arrangement handicap the instruction work in this field, but due to increased student enrollment, such laboratories as we have are overcrowded to the point where some other arrangement is very urgently needed. The current enrollment of 334 women students in the College is an increase of 80% in the last six years, and is an indication of the growing need for providing adequate facilities for women's work on the Campus.

2. *Propagation house, head house with glass house and heating unit for new Nursery Research Project at Waltham* $8,500

In 1935 research work in Nursery Culture was established at the Waltham Field Station by special appropriation of the Legislature. This work has now developed to the point where greenhouse and laboratory facilities are needed if the work is to be effective. It was hoped to provide these with $3,500 of the Maintenance appropriation for the year 1936, but because of increased construction costs, it was discovered upon opening bids that the minimum facilities immediately required could not be met with this fund. Therefore, it was decided to

return this amount to the State requesting reappropriation with an additional sum of $5,000 to meet the needs of the Nursery Research project on an adequate basis. With this amount it is intended to provide a head house, adjacent glass house and heating unit equipped with benches, piping for bottom heat and other equipment.

3. *Incinerator and Building* $3,500

There is urgent need for this type of equipment since all of the institutional rubbish now has to be dumped at one section of the College farm. This location has not only become saturated requiring immediately other provision, but this method of disposal is unsanitary and expensive. The Power Plant boilers have been used to some extent for the disposal of rubbish but this has caused difficulties and the practice has been stopped by Executive Order. There is very urgent need for such facility as this project would provide.

4. *Reconstruction of South College* $40,000

This building was constructed in 1885 for dormitory and classroom use. Gradually it has been taken over for administrative offices until it is now used entirely for that purpose. The present arrangement of rooms and lack of toilet facilities make it very inappropriate for office use and it is the purpose of this project to reconstruct the building so that it will be able to effectively serve its purpose.

5. *Barn for Herd Sires* $3,000

The College maintains six breeds of cattle and at the present time has housing facilities for only six bulls. This necessitates disposal of good bulls prematurely from the standpoint of progress in breeding which is a very important part of the College educational program. Additional facilities for herd sires should be provided. We should have two bulls of each breed on hand continuously.

II. LAND ACQUISITION

6. *Dickinson Property* $15,000

This property consists of 60 acres and buildings adjoining College land on the north. The land is much needed for field and orchard work of our Experiment Station and should be owned by the College to protect its holding. The buildings are very substantial and the property as a whole could be used to excellent advantage by the College.

7. *Powers Property* $2,500

This property consists of approximately one-half acre with buildings and is situated almost in the midst of the Campus, being surrounded by College property on three sides. It is very close to present College buildings and should be owned by the Institution, for if continually held in private hands, it might well be exceedingly detrimental to the best interests of the College.

8. *Avery Land* $5,000

This tract of land composed of six acres adjoins the College property on the south and should be owned by the College particularly since it is close to the site where it is planned eventually to locate buildings for women students.

III. GENERAL IMPROVEMENTS

9. *Reorganization of Campus Electric System* $4,000

Much of the distribution system for electric current is in need of replacement and reorganization. As additions have been made from time to time, various lines have been laid out without semblance of efficient circuit. Many of the poles have been in so long that it is essential that they be replaced. It is, therefore, a proper time to re-

organize the distributing system and it is proposed herein to accomplish this on the east Campus where conditions are worse. An appropriation of $2,000 was made by the Legislature of 1936 for this purpose, but it has proven that this sum is not adequate to meet the need and it is being returned to the State with request for reappropriation plus an addition of $2,000, making a total of $4,000 in all as indicated herein.

10. *Completion of Biology Laboratory at Hatch Barn and Equipment* $9,500

The old Hatch Barn was partially reconstructed in 1934 to serve as a biology laboratory for the Experiment Station, through the use of Federal funds. These funds were not adequate to complete the reconstruction nor to provide necessary equipment. This laboratory is urgently needed to provide for the research work of our Experiment Station in the field of human and animal nutrition. Interior walls are unfinished, a considerable portion of the plumbing is not yet installed and there is need for considerable laboratory equipment in order to make this building effective for the research and educational program for which it is intended.

11. *Tiling Ice Cream Laboratory in Dairy Building* $4,000

The Dairy laboratory at this College should serve as a model for private operators, but as a matter of fact, it is in some respect behind most modern plants. One of the principal improvements needed is the tiling of some of the manufacturing laboratories. The ice cream laboratory is in the worst condition at the present time, being a plastered room and much in need of repairs. It is proposed herein to install tiling throughout this room.

12. *Replacement of telephone cable and reorganization of system* $10,000

The College has completely outgrown the present telephone system by which some 200 phones are handled through one switchboard by one operator. The telephone company has made a careful study of the situation and recommends the installation of a dial system. They will install such a system without cost to the College, but it will be necessary for the College to construct an underground cable system between buildings for which this item is intended to provide.

13. *Drainage of Stockbridge Hall area* $725

There is a low area at the rear of Stockbridge Hall, main auditorium building of the College, which fills with water in the spring and after heavy rains, sometimes getting into the basement and always miring this important parking and traffic area. It is proposed to install three catch basins with a drainage line of approximately 500 feet of ten inch tile.

14. *Renew lineoleum floor at Dining Hall* $1,700

The present covering of the Dining Hall and cafeteria on the main floor at Draper Hall is in very poor condition and needs to be replaced. Originally it was a thin covering and it has been down approximately ten years. It is proposed to replace this with lineoleum over an area of approximately 640 yards.

15. *Fire protection, sprinkler system and other safety devices as recommended by State Fire Inspector* $15,000

The Campus buildings have been inspected by the State Building Inspector, who has made specific recommendations for changes and improvements to reduce the fire hazard. It is estimated that to carry out all of the recommended changes, a sum of $30,000 would be required. The request herein is to permit the accomplishment of substantial progress in this matter of fire protection.

16. *Renew wiring and improve lighting at Stockbridge Hall and Clark Hall* $5,500

In both of these buildings the present lighting is poor and very inadequate and because of increases and additions to the use of electric

current, the wiring is not of sufficient capacity and constitutes a risk. It is proposed to renew the wiring and improve the lighting facilities in these buildings which are used almost entirely for instruction purposes.

17. *Wire fence with two gates to enclose Women's New Athletic Field* $2,000

This field has just been completed as a WPA project and provides a much needed facility for our more than 300 women students. The field is surrounded on two sides by high terraces and unless the area is enclosed by a fence, balls will constantly run over the banks into crop areas and individuals will be climbing over terraces and doing much damage. From the point of view of efficient use by the Department of Physical Education for Women, it is important that provision is made so that the field can be closed off and not be accessible to all persons at all times.

18. *Sundry Equipment* $11,500

IV. ROADS

19. *Macadamize present dirt section of Lincoln Avenue and small dirt section of Olmsted Drive and improve lighting of Lincoln Avenue section* $20,000

The Lincoln Avenue entrance to the Campus on the south is a main entrance for through traffic and is very heavily traveled. It serves particularly the Athletic Field and the Physical Education building where large crowds meet for athletic contests, exhibitions, and many of the events which attracted more than 50,000 visitors to the College last year. The present road is in very poor condition and has been the cause of numerous complaints to College authorities. The small section of Olmsted Drive, which it is also proposed to macadamize, connects two macadam roads on a main Campus thoroughfare and should be improved to complete the hard surfacing of roads in the center of the Campus. The total construction amounts to approximately 2,800 feet. The project also provides for improved lighting along Lincoln Avenue which is not adequately lighted at the present time.

20. *Extras on* 1936 *Road project* $800

Unforseen contingencies arose in connection with the construction of macadam road as provided for by appropriation of the 1934 Legislature and in order to meet these, the amount indicated is necessary.

V. EXTENSION OF SERVICES

21. *Field and laboratory work for determination and study of shade tree diseases and insects, including the Dutch Elm Disease and its insect carriers* $5,000

The shade trees of the Commonwealth represent a very important though intangible value and everything reasonable should be done to preserve them in health and vigor. Various fungus diseases and insects threaten the life of these trees, but the greatest menace lies in the probability that the Dutch Elm Disease, now present in adjoining states, may cross our borders. If this occurs with the State unprepared to meet such an exigency, some three million American elms are almost surely doomed to destruction. This project is proposed as a measure of insurance against such an irreparable loss to the Commonwealth.

22. *Equipment and salaries for increase of service under Feedstuffs Law* $5,000

When feed control legislation was enacted some forty years ago, requirements were based on knowledge of that day. Since then marked progress has been made by science, in pointing out other factors which influence the value of feed, which are not now measured by laboratory tests. It is the purpose of this project to make it pos-

sible to check up on claims for vitamin potency and other factors made by a large number of feed manufacturers for products which they make and sell. This service is self-supporting in that fees charged more than cover the cost of the service.

VI. SPECIAL AND EMERGENCY NEEDS

23. *Student Aid* $5,000

This fund is used each year to aid worthy and needy students to pursue their college course. It is paid for labor in worth while work on the Campus.

24. *Emergency Fund* $4,000

This fund is used to meet emergency situations in productive departments and control services and is expended only upon approval by the Governor and Council when it can be shown that such expenditure will be productive of further income. The amount appropriated in 1936 was not sufficient to meet these emergency needs and a slight increase is therefore requested this year.

REPORT OF THE DEAN

In reporting the work of the year I must employ two significant words, activity and accomplishment. The selecting, teaching and directing of the largest student body in our history, the introduction of fundamental work in Wild Life Management and Community Recreation, the opening of the new Library, the housing of all freshman men on the campus for the first time, the extensive improvement of certain classrooms and laboratories and the completion and dedication of the new Woman's Athletic Field are outstanding accomplishments. In addition the college acted as host to no less than ninety-five social, professional and civic groups who were invited to hold their meetings here. These were attended by well over 50,000 people. It is a source of gratification that the facilities of the college were used so extensively. But such unusual activities make heavy demands on staff members and students.

The high student morale built up through the added comforts and opportunities afforded through the new Thatcher Dormitory for men, improved living conditions in fraternities and sororities, the renovated Memorial Building, and the new Goodell Library have reduced difficult student problems to a minimum.

To further the policy of making available to students increased opportunities for self expression and cultural development the Administration continued its efforts in strengthening class organizations and the work of student committees. The results have been reflected in the marked success of Scholarship Day, Phi Kappa Phi and Senior Convocations, the *Collegian*, the Roister Doisters, the Band, Art Exhibits, the Horticultural Show, the Informals, Dad's Day, Mother's Day, the Military Ball, Junior Promenade, Intersorority Formal, and the banquet, class day and commencement exercises of the Class of 1936. Increased attention has also been given to organized and informal play. To this end we have increased our facilities through the addition of a new athletic field for women and several tennis courts. Through intercollegiate athletics and intra-mural sports practically every student in the college was reached. The student health program of the college was strengthened and enlarged through the addition of a woman physician and a recreation specialist. The health record for the year was quite satisfactory.

Very distinct progress was made in giving the students added facilities for cultural advancement. The periodic Art Exhibits were continued and enlarged. The Fine Arts Council sponsored numerous informal programs of music, poetry, and literature. Through the efforts of this same Council two artists, Harold Bauer and Ernst Wolff, were brought to the Campus for two days during which each presented a formal concert, lectured to individual classes and groups and met interested students at an informal music hour. In addition Albert Spalding, the Guenther School Students, the Don Cossacks, and other artists and groups of artists appeared on the Campus under the auspices of the Social Union and the Amherst Community Concert organization.

Religion

It is a conviction that sciences, physical and social, are not of themselves sufficient for the solution of present-day problems. These sciences will find their full significance only in an appreciation of values, aesthetic and spiritual. The College must interpret the life of society as related to aims and appreciations that shall make life eminently worth living. There is a peculiar difficulty of teaching in the domain of values. To my mind "personal transmission" is an essential part of such teaching. Here lies the chief ability or characteristic of truly great teachers. The College must "guarantee conditions under which men of distinction and quality can live and work and must expose its students to a sympathetic presentation of the convictions and ideals of outstanding seers of our race." It is our desire to maintain a faculty whose teaching in every department shall have spiritual values of its own.

Some help may come from organized effort and to that end the College employs a Director of Religious organizations on the Campus. His salary is paid from funds contributed by Church Boards of Education, the parents of students, and friends of the College. He teaches two courses, "The Problems of Religion" and "The Literature of the Bible." In addition he assists individuals and groups with their problems. Naturally, this service is distinctly non-sectarian in character and every

encouragement is given to students to hold fast to the church of their choice. He also is responsible for the Vesper Service held every Sunday afternoon. Attendance at Vespers is entirely voluntary. No compulsory or even semi-compulsory religious service of any kind is now held on the Campus. Voluntary attendance is correct in theory, but one is forced to admit that it fails to reach the very students who should profit by an unbiased, tolerant presentation of religious messages. In other words, all too frequently the present type of service may conserve, but it does not extend.

Undoubtedly a greater appeal will come when the Vesper Service can be held in the more challenging atmosphere of the Old College Chapel which is now being restored. It is comforting to know that the building will be completed before the beginning of another college year and that in addition there will be installed in the Chapel tower a set of chimes, the gracious gift of Bernard H. Smith of the Class of 1899. Truth, beauty, goodness and faith in the eternal verities must be maintained as dominant influences on the Campus.

Student Aid

The report of our placement director indicates that an unusually large percentage of our students are either entirely or partially self-supporting. One must admire the student who with ability below the average carries a heavy schedule of classes, and in addition must devote a very appreciable number of hours each week to wage-earning. Yet our attitude is to discourage students without means of support, and not of high scholarship, from coming to College, on the ground that we shall be unable to support them and that they will find themselves defeated. A College course is a great adventure and should have as careful financial planning as any other experience to which we may aspire, and for which the cost must be planned in advance.

Needy deserving students during the past year have been helped through scholarships, loans and opportunities to earn. The number assisted and the amount of money involved through these three agencies were:

Scholarships, 133 students	$8,819.75
Loans, 148 students	13,725.00
Work, 682 students	51,643.91

Through the generosity of the trustees of the Travelli Fund, two additional scholarships of $100 each were made available this year. We now have six scholarships from this fund. The Farm and Garden Club also increased its grant for scholarships by $400 this year. Fortunately, the yearly cost per student is low, which means that scholarships varying from $60 to $100 frequently solve a needy student's financial difficulties. More scholarships could be used to advantage.

Convocations

One of the strongest forces on the Campus which makes for unity flows from our weekly Convocations. This is an assembly of students and faculty in Bowker Auditorium every Thursday morning. An effort is made to secure strong and effective speakers to address the students on topics which deal with every phase of human interest. In the quarter of a century that I have been connected with the College we have never had such an outstanding, inspiring and effective group of speakers as we were able to schedule this year. It is unfortunate that we cannot extend this Convocation privilege to all students. Bowker Auditorium seats only 944 and our undergraduate student body numbers 1,083. We need a large auditorium which will seat at least 3,000 people to take care of our entire student population and faculty in the graduate and undergraduate departments of the College and the Stockbridge School. It would also make possible the bringing to the College of Conventions and Conferences of citizens of the State interested in the work of the College as well as the giving of specia. programs of interest to parents, students and friends. Yes, a larger auditorium is a major need.

Curriculum

The College program of courses, course sequence, subject matter distribution and concentration through which the educational objectives of the College may be

realized is the curriculum. In a changing social order modifications of curricula and additions thereto must be made more or less regularly. During the year a curriculum for a new field of specialization, Wild Life Management, was approved. An expansion was made in the Mathematics Department through the introduction of four new courses—two in the practical applied fields of statistics and finance and two in the field of Engineering. New courses in Institutional Management, Economic Theory and History were also added.

The faculty adopted a permanent schedule for junior-senior courses. This will enable students to select their courses for at least a year in advance. Plans are practically completed for reducing the credit requirements of the senior and junior years. The total of credits required is to be reduced from seventy-two to sixty. This will give the student more time for personal reading and study. It should also assist in personality development because the student has time to enter more fully into those activities and to follow those interests which make a definite appeal.

Steps have also been taken to liberalize the required courses of the first two years. Two changes are being proposed to attain this objective. First, the material given in required courses is to be intensive enough to serve as an introductory course to specialized fields of knowledge and yet sufficiently general in character to broaden the outlook of every student regardless of his major interest. Thus the freshman course in Mathematics covers the basic principles and formulae of Algebra, Trigonometry and Analytic Geometry, thereby making it a tool-subject not only for the student in Mathematics and Physics, but for the student in practically every other major field as well. English, Modern Language, Agronomy, Home Economics I, Orientation and History are presented in a similar manner. Second, instead of requiring Chemistry and Botany of all students there is to be an option between Chemistry and Biology. In either case the general broadening character of the science is to be emphasized.

Recognizing the public demand for education in the field of Recreational Planning, a proposed curriculum was drawn up in this field by a special committee of the faculty after it had studied carefully the objectives and available facilities of the College. Their report is now under consideration by the Course of Study Committee. Inasmuch as the proposed program calls for only two new courses, the others already being offered, it is virtually certain that favorable action will be taken upon it.

It should be pointed out that the policy of the College is opposed definitely to intensive specialization. The curriculum of each student includes a common set of courses required for the freshman year. Also three-fifths of the work of the sophomore year is prescribed. In following this policy the College is not blind to the fact that there are varied types of students with differing potentialities and interests, but does appreciate that the strength of our required work lies in the fact that it provides them all with a common denominator.

It is in most cases impossible for an entering student to choose his own subjects of study wisely. To demand of him that he choose his courses is dangerous both because he has so little basis for choice and since it would usually deprive him of the intellectual discipline and firm foundational work in various departments of knowledge, values which required courses assure.

Student Mortality

Of the 239 students registered as juniors last year, 226 returned as seniors this September. Of the thirteen who failed to return, two transferred to medical colleges, four completed their requirements in Summer School, one transferred to law school, one entered aviation school, two entered business, two left on account of illness and one because of low scholarship. There were 260 of the 276 sophomores who returned as juniors. The sophomore class, numbering 274, indicates a loss of approximately fifteen per cent during the first year. Of these less than ten per cent were on account of poor scholarship.

While our student mortality from all causes is still too large, it compares favorably with the losses in other New England colleges and is much lower than in colleges of the South and West. Undoubtedly this is in large part due to the care with which students are selected and the assistance and direction given them by instructors and advisers.

Faculty

During the year new instructors were added in the following departments: Agronomy, Chemistry, Economics, Forestry, Horticultural Manufactures, Vegetable Gardening, Languages and Literature, Mathematics, Physical Education and Zoology. These additions have enabled us to reduce the excessive teaching load carried by some of the instructors last year. With the added classrooms and offices which will be made available in the Old Chapel, all the departments will be reasonably well housed with the exception of Physics and Home Economics. Relief for these departments can only come through the completion of Marshall Laboratory and the erection of a new building.

Professor A. A. Mackimmie, Head of the Division of Social Sciences, is spending the year in travel and study abroad. During his absence for professional improvement two of his courses are being taught by Professor Laurence Packard of Amherst College. The reclassification in rank of a number of deserving members of the faculty and the granting of step increases in salary have brought encouragement and maintained a good morale in our staff.

The retirement of Professor Fred C. Sears, Head of the Pomology Department, after a very successful teaching career, became effective last June. His outstanding and conspicuous service was recognized by the students who dedicated "The Index" (the College Year-Book) to him. In addition the senior class presented his framed portrait to the College as their class gift.

Early this fall at a very simple ceremony two trees were planted in front of Goessman Laboratory, one in honor of Dr. Joseph B. Lindsey, emeritus Professor of Chemistry, and the other in honor of Dr. Joseph S. Chamberlain, who is still actively connected with the Chemistry Department.

It is with sorrow that I report the death on May 23, 1936, of my immediate predecessor in the Dean's office, Edward Morgan Lewis. He resigned as Dean to become President of the College. At the time of his death he was President of the University of New Hampshire. He continued his active interest in the work of the College to the end. His passing was announced to the students, faculty and alumni through a special issue of "The Collegian." The contribution which he made cannot be found solely in the written records of the College, but rather in the lives of the generations of students he served so unselfishly.

Advisers

Grateful acknowledgment is here expressed for the faithful service rendered by the following who served as freshman advisers this year: Professors Boutelle, Mildred Briggs, L. E. Briggs, Caldwell, Cary, Fessenden, Fraker, Goldberg, Gore, Miller, Skinner, Asst. Dean Lanphear, Messrs. Marston, Helming, Isgur, and Troy.

Conclusion

Since all student matters of admission, discipline, class attendance, scholarship, conduct and general welfare are the immediate concern and responsibility of the Dean, my report would be incomplete without some reference to them. Problems of admission are numerous when a college is forced to restrict its enrollment. To these, Assistant Dean Lanphear and I must devote much of our time, particularly from April to the opening day of College. All doubtful cases are handled through personal conferences. Again, since no student needs to come to college save by his own choice, we may assume that if he does enter under a plan of limited enrollment he is willing to be instructed and educated as the college directs. Accordingly, serious problems of discipline are relatively few because the student may not assume that he has any right to behave in such a way as to injure the character or lessen the influence of the institution. While scholastic records are still unsatisfactory in too many cases, I am convinced that, as a group, our students are serious and appreciative. Through their growth, they are justifying the investment which the Commonwealth is making for them.

William L. Machmer,
Dean.

REPORT OF THE DIRECTOR OF THE GRADUATE SCHOOL

The enrolment in the Graduate School has varied very little in the last several years although there have been fluctuations in the special interests expressed by the students. The desire to obtain better preparation for gainful employment is always very much in evidence and those departments which placed their students in desirable positions naturally showed increases in registrations.

The several private and commercial funds, regularly available, have again contributed very significantly in providing financial support to worthy students interested in continuing their education. These funds are also operating very satisfactorily in serving the particular interests initially concerned in having certain investigations conducted. The results, therefore, are all to the good and this connection with industry has been encouraged. During the last year the following agencies have provided funds for these fellowship purposes:

American Cyanamid Company
American Medical Association
Beatrice Creamery Company
Campbell Soup Company
Corn Products Refining Company
Cranberry Exchange
Frosted Foods
Russia Cement
United Fruit Company
Wisconsin Alumni Research Foundation

Besides these funds, there was also the financial support from Federal sources in conjunction with the unemployment relief program. The Lotta Crabtree Fund, discussed in the last Annual Report, is continuing its assistance to graduate students. Progress and opportunities in the field of nutrition were sufficiently evident to attract the attention of Dr. Joel E. Goldthwait of Boston, graduate of this College, who was instrumental in obtaining financial support from private sources. The amount of $5,000 was received and designated as the Mrs. Henry Lang Fund in honor of the donor and during the last year it supported five fellowships.

Results from investigations and expansions in the field of food technology have been cumulative and impressive to the extent that the Trustees saw the wisdom of offering an opportunity to earn the doctorate degree in that field beginning with September, 1936. This action expresses, in tangible form, the realization that there is need for technical training in food technology that science departments, operating independently, have not been able to provide satisfactorily. The processing, merchandising, and preserving of food products deserve considerations that only a very broad preparation can provide. Several departments instead of one, or at best a few, should lend their facilities to contribute to a "major" in food technology. In that respect, this new major study is quite unique in its organization in that the student's graduate study will be guided by a committee composed of representatives of each department contributing to the doctorate degree instead of by one department only. As organized at present, these departments are: Bacteriology, Chemistry, Dairy Industry, Home Economics Nutrition, and Horticultural Manufactures. This arrangement for study in food technology, because of its broad scope, should make a strong appeal to students interested in preparing themselves for administrative or executive positions in that special field. The departments contributing cooperatively to this major study should derive benefit by having their viewpoint enlarged and their opportunities for service expanded. A more detailed descriptive statement of this offering will appear in the next Graduate School catalogue.

The enrolments in the Graduate School indicate a great diversity of interests. A total of thirty-seven degrees were awarded last year. Of this number thirty-five were for the Master of Science and two for the Doctor of Philosophy degree.

F. J. Sievers,
Director.

REPORT OF THE DIRECTOR OF SHORT COURSES

Winter School

For a number of years now the five-day dairy short courses have enjoyed an outstanding popularity, enrolling near-capacity classes each year. Work of this sort has continued to demonstrate its usefulness during 1936 and the State College is fortunate to be able to render such a marked service to the dairy industry of New England. Students were registered from all States of this northeast section, and from New York and Florida. Massachusetts citizens were in the large majority. The course for Tree Wardens and Town Foresters met an unexpected obstacle in the great flood of last March and, because of impassable roads and destroyed bridges, had to be cancelled. This work had been a strong drawing-card since its inception a few years ago by Professor Robert P. Holdsworth, and its omission accounts in large measure for the apparent shrinkage in total registration in Winter Short Courses.

A new five-day Garden School short course was organized and offered by the Division of Horticulture, under Professor Ralph A. Van Meter's direction, during the first week in April. Attendance was not satisfactory and it was thought best to discontinue further efforts along this line.

The College Field Station at Waltham carries on an extensive series of weekly lectures on timely garden subjects each spring, with funds supplied from our Short Course budget. Because of the Station's convenient location close to Boston and its great suburban territory, it is able to provide the same service much more effectively and for a far greater number.

The eleven-week short course for Greenkeepers probably represents the most ambitious and thorough-going course of its kind presented by any educational institution anywhere. It has proved its worth through good and bad seasons. Attendance has increased definitely over the smaller registrations of recent years when the golf business and club memberships have been somewhat in the doldrums. Next year we confidently expect to be able to broaden our program offerings in this field and reestablish an advanced course for the Greenkeeping alumni group. Professor Lawrence S. Dickinson has had this in mind for several years, but the times were inopportune. Eight States and two foreign countries were represented in the class of twenty registered for 1936.

Stockbridge School of Agriculture

A graduating class of eighty-five students, contrasted with fifty-three in 1935, received their diplomas in June at the 17th Annual Commencement. This increase, it is believed, only denotes the early return to normal size of our entering classes in this non-degree department of the College, and probably approximates what we should expect for the next few years at least.

The senior class gift to the College was a contribution of $50.00 to the uniform fund for the band. Four Stockbridge musicians qualified for band membership. An additional fund of some $60.00, remaining after all class expenses attendant on graduation had been met, was used to establish a trust fund for the Student Council, thus helping to improve and perfect worthwhile traditions and customs of the student group in years to come. I wish to record my personal appreciation for the help afforded in this way by the class of 1936.

Nearly two-thirds of the class had secured jobs at graduation, some few returning to home farms as always, but increased openings for practically trained men, chiefly in the dairy farming and milk and ice cream business, were evident.

Many expressions of appreciation of the work of Stockbridge graduates are received. As illustration I quote one from the comptroller of a prominent women's college in this State. He states: "We have for some time been meaning to write you regarding H. M.—who is one of the boys we have obtained from the Stockbridge School of Agriculture at the State College. In my opinion he is by far the most satisfactory person we have had, and Mr. H.—, Superintendent of Buildings and Grounds, joins me in this expression of satisfaction. He is quiet, unobtrusive and cooperative as well as a diligent and efficient worker; and we have confidence in his training and intelligence.

"This is a completely unsolicited recommendation. We have not discussed the matter with Mr. M. We make it because we feel a sense of responsibility for boys who manifest an ability to carry more responsible positions than we can provide for them. We shall, I am sure, be fortunate in retaining Mr. M's services as long as he makes them available to us, but we would not feel that we were discharging our personnel problem properly if, in instances where advancement is merited, we failed to cooperate in making such advancement available. Should he move on, we would then look to you for another man to to replace him."

We value highly the splendid employer cooperation shown by such a letter.

For the commencement exercises in June, four student speakers were chosen from the graduating class on the basis of high scholarship, and interesting practical experiences, demonstrating the objectives and purposes of the Stockbridge program.

John Emerson Bransford, (Floriculture), of Patchogue, Long Island, New York, discussed the topic, "Specialization with Diversified Training—A Student Analyzes a Typical Stockbridge Major Program"; John Wadsworth Howe, Jr., (Dairy Manufactures), of Nashua, New Hampshire, told us why "An Out-of-Stater Comes to Stockbridge"; Katherine Berry Offutt, (Animal Husbandry), of Southboro, answered the challenge of "Women in Agriculture"; and Raymond Willis Richardson, (Fruit Growing), of West Brookfield spoke on "The History of an Old New England Farm". Mr. Richardson has a rather unusual family connection, in that two of his uncles have been State Masters of the Grange, one in Massachusetts and one in California.

For the first time in the history of the School, two college graduates with degrees, one from Yale and one from Dartmouth, requested and earned Stockbridge diplomas.

Attendance of Stockbridge graduates at the June alumni meeting was unusually excellent for that seasonally busy period when many are so closely tied up with urgent farm affairs. The class of 1926 is to be congratulated especially on its fine ten-year reunion.

To recognize suitably, on the occasion of his recent retirement, Professor Fred C. Sears' long service to the College, an Alumni Association committee raised a gift fund among his old students who had taken his courses in Fruit Growing and had presumably passed them with some measure of satisfaction and credit. He was presented with a set of binoculars by Ernest F. Markert, S'26, chairman of the committee.

Registration this fall brought in another large freshman class of 146. A senior class of 98 returned after the six months' placement training period as compared with 113 students who took jobs in April and May. Total registration for 1936 is 244, for 1935, 239.

In the new major in Wildlife Management, it was decided to restrict enrolment in the second, and possibly in several future classes, to not more than ten students. Registration in the first class last year had been sixteen. Difficulty in securing satisfactory placement positions and a lack of job opportunities at present for graduates trained in this special occupation seem to justify such a policy, and more especially by reason of a greatly increased number of students applying for this course in the year just concluded. A faculty committee is in charge of selecting the approved candidates and, through personal interviews with the applicants, endeavors to choose those most likely to profit by the training. Until laboratory equipment, materials, and teaching procedures have been more completely developed in this new vocational field (for us), any tendency to increase the present size of classes would be most hazardous.

Summer School

The College summer school presented a program of twenty-five credit courses during the six weeks session from July 6 to August 14. The course in "Institutional Foods and Management" was given to fill a special emergency and will be included in the regular College session Home Economics courses beginning next year. All teaching positions were filled by members of our College staff except one. Professor Willard Wattles of Rollins College, Florida, was visiting instructor in charge of two courses in English.

The enrolment of 141 students was slightly larger than last year. Graduate School registrations numbered 53. Forty-eight students were undergraduates of the College and 59 registrants were teachers in service.

The increasing number of graduate students and teachers suggests a growing need for more courses of graduate grade and a greater variety of educational courses. This we hope to accomplish by making some shift in the program for next year and by further additions to the summer teaching staff. To do this most effectively the present budget should be increased.

A custom of the past few years, whereby courses not filling to a prescribed minimum at registration were withdrawn, was definitely eliminated. It was felt such a procedure was unfair to the instructor and caused difficulty for students in arranging a desired program. The confusion and uncertainty resulting from such a plan has been removed and practically all courses have since had satisfactory enrolments.

It seems evident from our experience of several years, that concert and lecture programs, introduced for recreational and cultural purposes, do not command sufficient interest and attendance from our summer students to justify the expense involved. The fact that there is a small resident group of students, that some of them are occupied at tennis and other sports during the long evenings, and that a considerable proportion are commuting students, all help to explain the cause of this situation. We shall probably plan to concentrate our efforts another year on a well-developed sports program for student recreation, with the weekly picnics, which have been so splendidly patronized, a continuing feature. To transport and satisfy the appetites of 75 to 100 students and faculty folk has been no small task, and I wish to give full credit to Professor and Mrs. L. L. Derby for the excellent management of these affairs.

Roland H. Verbeck,
Director.

REPORT OF THE GOODELL LIBRARY

The Library system now contains 105,435 catalogued books, about three-fifths of this number being housed in the Goodell Library, the remainder in forty-five department libraries.

The Library has been kept open for study and borrowing of books 350 days. There were loaned for use outside the building during the year 15,625 books, the months of largest borrowing being January, 1,984; March, 1,967; and May, 1,676.

The classes of books most borrowed were: Literature, 3,464; Useful Arts or Applied Science, 2,001; Social Sciences, 1,882; Current Periodicals, 1,566; and Sciences, 1,480. It should be borne in mind, to understand these figures, that a large part of the use of books of science is through the department libraries. On the inter-library loan system, 33 volumes were loaned to other libraries, and 176 borrowed from them. Over five hundred periodicals, and many other serials, are received and kept on file.

The year has been one chiefly of steady progress, getting settled in the new building, and teaching students its use so as to maintain quiet for the many who wish this for concentrated study. A notable event of the year has been the acquisition and installation of the Storrow Library in Thatcher Hall, by the generous gift of Mrs. James Jackson Storrow of Lincoln. A great gift of books, especially on rural sociology and missions, is being gratefully received from Mrs. Kenyon L. Butterfield, from the library of the late President Butterfield. Chiefly through the generosity of Prof. Frank A. Waugh, the Library has acquired a splendid collection of travel posters, now numbering over 225. These represent not only the United States but several foreign countries, and are in many cases the work of very famous artists, in a great variety of artistic styles, so that they form a great addition to the art possessions of the College. The Library has mounted these posters, so that they are ready for use as exhibitions.

Two interesting innovations which concern the Library have been the formation of the Amherst Camera Club, and the Music Records Club. The former includes citizens of the town, as well as members of the faculty and undergraduates. Its meetings have been held in the seminar room of the Library, and its monthly

exhibitions, loaned from other camera clubs, or supplied locally, have been a great addition to the upper floor of the Library during the year. The Music Records Club confines its membership to undergraduates and faculty, including faculty families. Its object is the purchase and loan of phonograph records, and the loan system is conducted at the main desk of the Library. This Club also is rapidly proving to be a noteworthy addition to the life of the College.

A feature of the work of the Library which ought perhaps to be better known is its very unusual amount of book repair work and pamphlet binding. In an institution needing to use great amounts of pamphlet material this service has met with much praise, as solving a problem of the mechanical handling of printed matter which is often very troublesome.

A great problem confronting the Library is the large number of books, both old and new, which need to be catalogued, and which, with the present staff, must necessarily wait too long for this treatment.

B. B. Wood,
Librarian.

REPORT OF THE DIRECTOR OF PLACEMENT SERVICE

A considerable part of the work of this department is rightly concerned with the fields of occupational guidance, job specification, occupational trends, etc. in which definite results are difficult to measure. However, there is one tangible part of the work which shows increasing results, namely the actual placing of our men and women in remunerative and experience-gaining positions. The activity first mentioned is actually as important as the latter, if not more so, but to the average student or graduate definite "leads" which can be followed or actual placement seem more important.

Our job is threefold: 1. Contacting employers for positions in which to place our students; 2. Instructing the students in the proper manner of making contacts, applying for positions, interviewing employers, etc.; 3. Occupational and personnel counseling and guidance. In the winter of 1936 a series of lectures was conducted for the seniors on Occupational Trends, Opportunities and Job Finding Technique. The attendance was encouraging, much interest was shown by those attending and we propose to make this a regular activity.

The employment record of the men graduates of the class of 1936 is most encouraging. Up to October, 1936, our records indicated that 86 per cent had obtained employment or were continuing their education in graduate or professional schools. This figure is an increase of 19 per cent over the previous class. This is a very good indication of improved business conditions.

The opportunities for men majoring in agriculture and horticulture are still more plentiful than in the fields of general business and industry, with the result that practically all of the seniors majoring in these fields have secured employment, and the employment for the Stockbridge School seniors in the class of 1936 is 97.5 per cent. There were 245 openings in agriculture and horticulture available during the year and from this number 4 college seniors, 52 Stockbridge seniors, 14 college graduates, and 62 Stockbridge graduates were placed, making a total of 132, leaving a balance of 113 jobs or openings which were not used. At the same time there were 59 college graduates and 206 Stockbridge School graduates enrolled on the active list seeking employment. What is the reason that 113 openings went to waste in view of the fact that there was a much larger number of graduates enrolled than were finally placed? I think the answer lies in the fact that a number of students might have secured any one of a number of the positions while many others recommended for numerous openings failed to meet the rather rigid employment standards of the present time. Therefore, quite a few excellent openings remained unfilled, the reason being, lack of qualified registrants. Most of those who were still unplaced could not impress employers sufficiently with what they had to offer. Perhaps another part of the answer lies in the fact that many of these jobs listed as available positions were not of a class to interest other than recent graduates and practically all of the recent graduates and the seniors were placed. Almost all of the graduate registrants are and have been employed but are looking for an opportunity to

better themselves. In filling one position four applicants were benefited because as each in turn gave his notice to accept the new position, the present employer gave him a raise in salary so that it was only the fourth registrant who secured the new position.

I believe that more emphasis should be placed on securing summer employment for our men students. A total of 204 students, four graduates and 20 seniors were placed for the summer months through the efforts of this department. Totaling the figures also shows that 104 seniors and 91 graduates were placed. A final totaling of these figures discloses that this department was instrumental in securing permanent or summer employment for 423 students or graduates.

The outlook for the future is most promising. Industrial personnel representatives have already indicated a desire to interview our present seniors. A year ago a number of such representatives interviewed seniors and in one case six members of the class were offered career opportunities by one firm. It is apparent that general industry is becoming more and more familiar with the broad scope of our curriculum, and that among our graduates are men of promise who aspire to successful careers in business; as well as in agriculture and the professions.

Our intensive program of personal interviews with undergraduates aims to develop career-mindedness at as early a period in their college course as possible. Thus far our efforts have been concentrated upon the senior class. We are planning, however, to interview as many of the present freshman class as possible before the close of the year and thus we hope to impress upon them the importance of early action towards permanent placement and the service which this department has to render in their behalf.

A summary of the part-time student employment during the College Year 1935-1936 shows that 623 students earned a total of $50,104.30. This is an increase over the previous year which, according to the records, shows that 560 students earned a total of $32,869.06. In addition to this, 65 girls were aided this year in securing part-time employment in off-campus jobs.

Totaling all the placement activities engaged in by the department shows that 1,111 undergraduates and graduates were aided in securing employment in some form. It is a known fact that the total is even larger because it is difficult to secure complete return information from the individuals to whom employment openings are offered.

The demand for part-time employment is as great as ever. Only about 50 per cent of the applicants for jobs under the National Youth Administration and Special State Student Aid Fund can be taken care of. We are assured of our federal (N.Y.A.) funds for the remainder of this year but fear they may not be available next year. Students and college have derived great benefits from these programs. Money earned by students made their education possible, departments had the benefit of man-power which limited budgets could not provide; but most beneficial of all was the personal satisfaction resulting from job experience and a closer department-student relationship.

Women Students

During the past year there have been more opportunities to place the women students both for permanent and temporary work than for several years past. This is due both to there being a larger number of positions available and to an increasing number of contacts made by the Placement Office. Quite a few calls have been received which could not be filled as there were no graduates with the required experience available. A considerable number of women graduates have taken business positions of various kinds, indicating increased opportunities in that field.

Besides direct placement of students there are other needs to be met. Nearly all senior women have been interviewed each fall. Personality data concerning them which would be helpful for their placement has been assembled at the Placement Office. They have been aided with information as to occupational opportunities, methods of preparation, and ways to seek positions. Early last year at the request of the Women's Student Government Association, three talks were given for seniors and other girls interested, on how to get positions and vocational opportunities for June graduates.

There is much demand for summer and self-help work from the women students and many positions have been found for them. Whenever feasible they have been placed in positions where the work would be helpful for their future interests. Records are kept of the vocational activities of the women students in college and of the alumnae. Graduates are from time to time placed in positions and all are urged to keep in touch with the Placement Office that they may be aided if necessary.

In addition to the preceding items the usual course for freshman girls in vocational opportunities for women is also given and a similar course is also given to the freshman girls in the Stockbridge School.

Emory E. Grayson,
Director of Placement Service.

REPORT OF THE DIRECTOR OF THE EXPERIMENT STATION

The Annual Report of the Experiment Station issued regularly as a separate bulletin is intended to cover, in considerable detail, the results from research for the previous year ending with November 30th and, therefore, this report will deal only with generalities as these pertain to policies and new developments.

As a result of a re-evaluation of contemplated services to satisfy the desires for increased research in nursery culture at the Waltham Field Station it was considered the part of wisdom to temporarily forego the utilization of the appropriation made last year for expansion and equipment in the hope that reconsideration would find approval for an enlarged appropriation such as is included in the present budget requests. In the meantime, our new research program has not only been put into operation but is serving very effectively under the leadership of Professor George Graves and Mr. Harold S. Tiffany.

The demands for service in vitamin values of foods have taken on proportions quite beyond what was anticipated when the Nutrition Laboratory was first provided and partially equipped. This laboratory has afforded a means for a very desirable type of cooperation among members of several departments in the college and its effectiveness is already attracting quite general attention. During the year an amount of $5,000 was made available to the Experiment Station by private gift for the purpose of adding encouragement to the activities in that phase of nutrition which deals with some of the numerous human deficiency disorders. This donation, obtained largely through the activities of Dr. Joel E. Goldthwait, has been designated the Mrs. Henry Lang Fund in honor of the donor. The American Medical Association has also expressed its recognition of our service by making a voluntary financial contribution to the support of this work.

At the Cranberry Field Station, our attempts at solving some of the management problems, especially as these relate to weed control, have been instrumental in impressing the members of the Cranberry Growers' Association sufficiently to cause this organization to appropriate the sum of $500 for the purpose of giving special encouragement to work in that field.

All of these reactions which, in themselves, are very complimentary, nevertheless, become somewhat embarrassing when we find ourselves continually in a position where we need to be apologetic in not being able to serve adequately those who have a right to make requests. At present, there are demands before us from the Massachusetts Arborists Association to assist them in establishing a sound basis for dealing with the numerous entomological, pathological, and physiological problems confronting them in their attempts to preserve and enhance the natural horticultural beauties of the State.

The Greenskeepers, too, are very active in soliciting our aid in the solution of the many problems confronting those who have the direct responsibility for providing such golfing facilities as a recreation-conscious public is increasingly demanding.

The poultry interests in the State are very urgent in requesting our assistance in providing them with certain information and protection regarding many of the claims made for vitamin values of poultry feeds. Such services are already fairly well established in some of the other states and analytical methods in this field are rapidly becoming a part of Feed Control regulations. Sooner or later, the State of

Massachusetts will need to deal with this matter and it is hoped that Legislative approval may be gained for an item at present included in our budget for the purpose of establishing a small laboratory in which the several feeds may be put to direct feeding tests.

To meet these and other definite demands requires an expanding budget and it was planned that the gradual enlargement in funds available from federal Bankhead-Jones sources might enable the Experiment Station to meet these needs. It is necessary, however, that State appropriations continue to provide for the needs of our current program and in this matter we have some concern. If this is not done some of our agricultural groups are likely to seek direct action in obtaining legislative appropriations. This type of expansion does not necessarily make for the most satisfactory program but unless the Legislature, through its advisors, realizes the need for taking the initiative, there is sure to be an attempt to confront it regularly with demands for comparatively large increases in our financial support.

The soil conservation program, organized under the federal administration as an aftermath of the depression, is sure to find a very practical expression after many of the primary administrational difficulties and problems have been overcome. Naturally, such a program is decidedly influenced by local conditions. The United States represents all extremes in variations in the agriculture of the northern temperate zone. These extremes are further influenced by such artificial economic factors as always have a signficant bearing on the practical phases of any industry. Most of the problems, therefore, are more or less unique to a region within the area and local authorities will find it necessary to express considerable leadership if the service is to become effective and worthy of respect and enthusiastic support. The Experiment Station is attempting to assume some of the responsibility that this development requires.

In this connection, it should first be established that soil conservation is justified as a public policy. In the past, we have been inclined to assume that this was the obligation of the individual farmer. His natural interest in posterity was supposed to furnish the intiative to keep the farm in a high state of productivity. This is a splendid ideal and, no doubt, one that makes a strong appeal especially in areas where many of the sentimental values of ownership and possession are recognized. Unfortunately, however, the business of farming has become so decidedly competitive in recent years that the responsibility of providing for the immediate requirements of the farmer and his family has taken on tremendous proportions. This tendency naturally crowds all interest in the conservation of soil productivity into the background. As a result, our soils have deteriorated through erosion and general exhaustion at a very rapid rate and there is definite realization that this is a matter deserving of the constructive interest and support of the entire consuming public if our standard of living is to be maintained. The State of Massachusetts, while, in general, fairly sound in its soil management program, thanks to its favorable natural conditions, nevertheless has its problems in this connection.

F. J. Sievers,
Director.

The complete report of the Experiment Station is published in a separate bulletin.

REPORT OF THE DIRECTOR OF THE EXTENSION SERVICE

This year the full report of the Extension Service is being published as a separate bulletin. This statement, then, is merely a brief review of the major policies and trends of the past year. In addition to carrying on the regular educational programs and giving every possible assistance during the March flood emergency, the staff has been active in assisting with the National Soil Conservation program.

Since the passge of the Soil Conservation and Domestic Allotment Act the Extension Service has made every effort to acquaint farmers with the provisions of the Act and its application to their conditions. Meetings were held and printed educational material was prepared to bring the program before the farmers in as quick and effective a manner as possible.

Administration of the program has been in the hands of the farmers themselves and their state, county, and community committeemen. The Extension Service

has worked in close cooperation with these committees. This has been one of the most conscientious and concentrated programs which the service has ever undertaken, and considering the limited time available, results were very satisfactory.

Another major development of the year was the increased use of local leaders and committeemen in planning programs, developing projects, and carrying them through. The County Program Planning Project was conducted on this basis. Through this project, committees of leading farmers in each county are studying basic economic and social information with the idea of finding ways in which agriculture can best meet the everchanging situations influencing the production of farm products.

The development of state extension educational programs on a commodity basis has been one of the most interesting accomplishments of the year. All college departments and specialists whose work touches on any particular farm industry are getting together with leading farmers and representatives of farm organizations to work out complete programs for the industry. Programs for dairy, fruit, vegetables, cranberries, poultry, forestry, and cash crops are so far under way.

Trenches have been dug in many orchards throughout the state in order to demonstrate certain fundamental relations between soils and tree behavior. This project has provided object lessons for the desirability of cultural methods to overcome the handicap of poor soil types.

In Franklin county a project for rural electrification has been carried out with notable success. It is estimated that 230 miles of new electric lines will be constructed for 700 new users. While these lines will not result in electricity being available to every resident of the county, they will come very close to that.

During the year, the home demonstration agents and specialists made more than 5,000 home visits to find out from the people what their real needs are and what programs they want. Community groups have multiplied, and the extension workers are helping to train many local leaders to head these groups.

It is significant as a future trend of home economics extension teaching that these community groups are not entirely content with studying how to make a better dress or prepare a better lunch box for the school child, but they are taking time at their meetings to discuss economic and social problems. If we are to act intelligently on the problems that come before us, then we must have discussion among such groups on questions of the day.

Another evidence of the efforts of the Extension Service to keep its programs down where the people can get the most out of them is the study in New Salem, where practically every house was visited to ask people what they desired, how they desired it, and why they had not been getting the most helpful service. As a result, future extension programs will be more adapted to the needs of the people.

About a year and a half ago a study was made of the effectiveness of 4-H club agents. The conclusion was reached that if the agents were to serve more young people, the communities would need to assist in locating leaders and in encouraging club membership. Committees have been organized in a great number of communities and have given fine leadership to clubs as well as assisting in building the programs which the clubs are carrying. In a few counties, county councils are consulting with 4-H club agents and giving assistance in developing the county 4-H club programs. The organization of Service Clubs has been another achievement. Older club members are forming these clubs and seeking opportunities to be of service to their communities.

Further aid in leadership is given in the summer training camps for club leaders that are held each year on the State College campus.

A new development in club work is the Conservation Club. Opportunities in this are state-wide, and every community can now have something to interest 4-H club members. The program includes activities in forestry, fishing, bird protection, and wild life development.

Increased requests have come in from county and community groups for assistance in recreational programs. To meet this need, one staff member was added and work developed in assisting communities in organizing recreational facilities and other community services in addition to providing leadership training in music, nature study, handicrafts, dramatics, and discussion groups.

The Extension Service has continued to make good use of radio as a means of

distributing information. A conservative estimate places the number of requests for information due to radio at more than 5,500.

Massachusetts newspapers have also cooperated in distributing information to farmers and homemakers. Results show that news stories continue to be a most effective means of extension teaching.

In carrying out the extension program, a great deal of assistance has been received from the Resident and Experiment Station staffs. This help will be needed to a greater degree in the future to take care of a continually growing service to the people of Massachusetts.

WILLARD A. MUNSON,
Director.

The complete report of the Extension Service is published in a separate bulletin.

REPORT OF THE TREASURER

HOW STATE FUNDS FOR MAINTENANCE WERE USED IN 1936

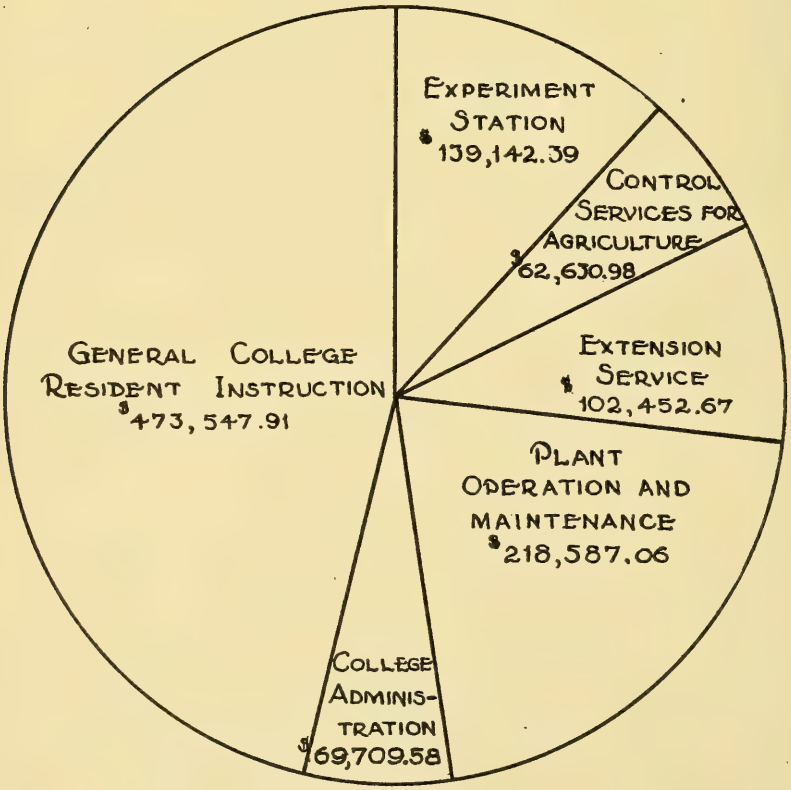
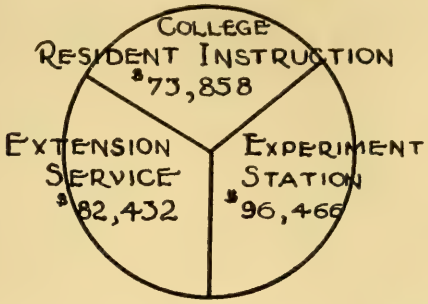


Chart 2 Total Expenditure $1,066,070.59

How Federal Funds for Maintenance Were Used in 1936



Total Expenditure $252,756.00

State Appropriations for Maintenance in 1936 Showing Receipts Returned to State Treasurer

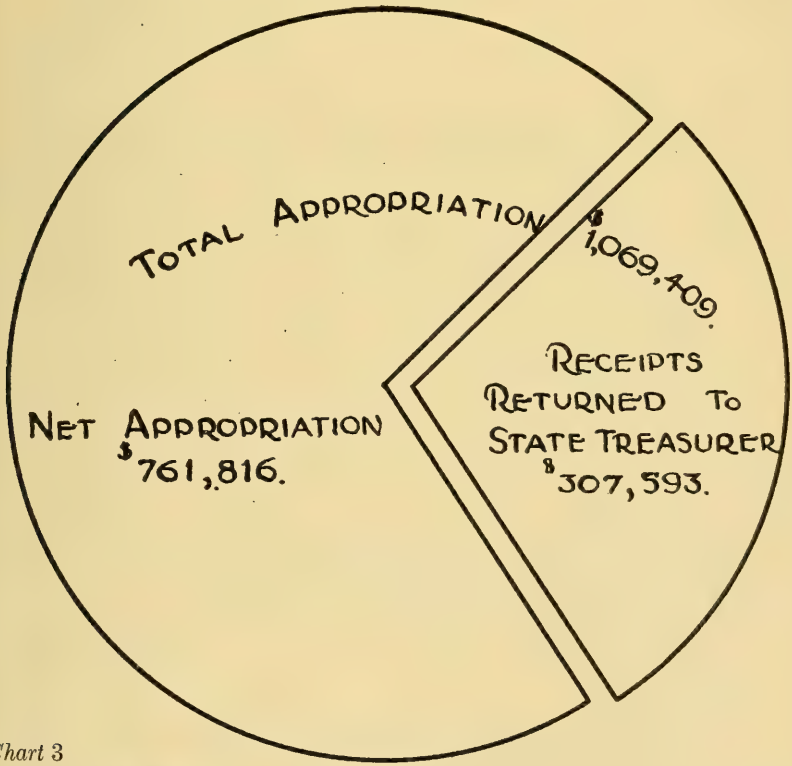


Chart 3

Total Appropriation	$1,069,409.00
Receipts Returned to State Treasurer	307,593.00
	$ 761,816.00

Receipts are derived from student fees and tuition, sale of products of farm and orchards, payments for agricultural services in connection with agricultural control laws, etc.

The financial accounts of the College are divided into three sections, the State appropriation, the Federal appropriation and Trust Funds.

The State appropriation is further divided into current maintenance appropriation and special appropriation for building or other improvements to the capital investment. A summary of these appropriations and trust funds gives the following statement:

Dec. 1, 1935	Balance	$249,539.10	
Nov. 30, 1936	Funds available	1,745,186.48	
			$1,994,725.58
Nov. 30, 1936	Expenditures	$1,744,954.32	
Nov. 30, 1936	Reverted to Commonwealth Specials		
	Maintenance	108.22	
	Debit to 1935 Balance	103.28	1,745,165.82
Nov. 30, 1936	Balance carried forward		$249,559.76

This balance is divided as follows:

College—current	$12,300.37
College—special	58,712.63
Federal	104,051.63
Trust funds	74,495.13
	$249,559.76

The receipts of the College which were paid to the State Treasurer amounted to $307,592.60. This is an increase of $17,549.50 over the year of 1935.

The income from our Endowment funds amounts to $7,068.42, which is a return of 4.56 per cent on all investments. From our defaulted bonds, The Prudence Bonds Corporation, The Prudence Company, The State and Washington Building, and The Brown Company, we have received $60 interest on The Prudence Bonds Corporation, and $276.50 interest and $350 on the principal of The Prudence Company. We also received $16.50 on account of the Hardy Fund, being another dividend from the Essex National Bank of Haverhill. The total amount of our Endowment funds at par value is $155,050.60 and the market value December 1, 1936, was $149,473.73, an increase in market value of over 11 per cent.

One hundred and fourteen loans were made to students aggregating $8,978.75, and 111 scholarships granted, aggregating $2,710.

This year we have changed our method of valuing our inventory of buildings and equipment from a cost less depreciation basis to an actual cost basis, upon the recommendation of the National Committee on Standard Reports for Institutions of Higher Education. This change, together with the natural increase in our physical inventory, makes an increase of our total inventory of $558,812.04 over 1935.

An examination of the accounts of the Institution for the year ended November 30, 1935, was made under the direction of the State Auditor.

A complete statement of all receipts and expenditures follows.

FRED C. KENNEY,
Treasurer.

SUMMARY OF FINANCIAL REPORT FOR 1936

Current Maintenance Account

I.	STATE FUNDS	
	a. Appropriation for 1936	$1,069,409.00
	b. Expended to November 30	1,057,108.63
	c. Outstanding liabilities for which funds are reserved	8,937.44
	d. Balance reverting to State Treasury	$3,362.93
II.	FEDERAL FUNDS	
	a. Appropriation for 1936	$318,739.62
	b. Expended to November 30	308,936.90
	c. Balance	$9,802.72

III.	TRUST FUNDS	
	a. Receipts	$300,401.80
	b. Expenditures	293,790.72
	c. Balance	$6,611.08

Summary of Maintenance Account

I.	Balance on hand Dec. 1, 1935	*$171,269.92
	Receipts for year	1,688,550.42
		$1,859,820.34
II.	Expenditures to Nov. 30, 1936	*1,668,973.21
	Balance Nov. 30, 1936	$190,847.13
III.	Distribution of Balance	
	1. 1935 State fund liabilities	$8,937.44
	2. State funds reverting to State Treasury	3,362.93
	3. Federal Funds	104,051.63
	4. Trust Funds	74,495.13
		$190,847.13

Capital Improvement Account

A.	APPROPRIATIONS	
	I. Under P. W. A.	
	a. Renovation steam and electric lines (balance)	$2,175.98
	b. Men's dormitory (balance)	2,085.33
	c. Library (balance)	43,679 97
	d. Chapel library building	†40,000.00
	II. Special State	16,500.00
	III. Balance from State appropriations of 1934 and 1935	30,360.68
	Total	$134,801.96
B.	EXPENDITURES	
	I. For construction	$75,981.11
	II. Unexpended balance of 1935 finished projects returned to State Treasury	108.22
	Total	$76,089.33
C.	BALANCE BROUGHT FORWARD FOR 1937 CONSTRUCTION	$58,712.63

Consolidated Statement of Federal and State Credits and Payments

1935			
Dec. 1	To balance on hand	$94,248.91	
1936			
	To refunds on account of previous years	932.14	
Nov. 30	To departmental income	307,592.60	
Nov. 30	To receipts from State Treasurer	855,487.32	
Nov. 30	To receipts from United States Treasurer	313,457.96	
Nov. 30	To bills paid by State Treasurer	292,619.44	
Nov. 30	Refunds transferred to State Treasurer		598.40
Nov. 30	Expenditures for fiscal year		1,451,163.60
Nov. 30	Income transferred to State Treasurer		308,524.74
Nov. 30	Balance on hand		104,051.63
		$1,864,338.37	$1,864,338.37

Statement of Legislative Apportionment and Expenditures for Fiscal Year Ending November 30, 1936.

	Apportionment for last fiscal year		Expenditures	
College				
Personal Service	$520,105.13		$522,265.72	
Maintenance	178,076.01		171,499.76	
		$698,181.14		$693,765.48
Replacements	7,000.00	7,000.00	7,108.53	7,108.53
Experiment Station				
Personal Service	109,778.55		102,036.74	
Maintenance	16,021.56		24,562.02	
		125,800.11		126,598.76
Extension Service				
Personal Service	72,915.32		72,605.22	
Maintenance	30,700.00		29,847.45	
		103,615.32		102,452.67

*These sums include an item of $9,136.96 brought forward from 1935 appropriation to meet 1935 obligations paid in 1936.

†$5,000 additional added in December, 1936.

Short Courses			
Personal Service	$52,340.00	$51,238.98	
Maintenance	8,500.00	8,727.17	
		$60,840.00	$59,966.15
Waltham Field Station			
Personal Service	6,100.00	5,814.78	
Maintenance	8,834.59	5,903.47	
		14,934.59	11,718.25
Trustees Travel	1,204.80	657.41	
Printing Reports	1,300.00	1,347.36	
		2,504.80	2,004.77
Fertilizer Law	15,790.00	15,398.95	
Poultry Disease Law	24,680.00	25,222.50	
Dairy Law	1,000.00	764.57	
Feed Law	12,740.00	11,363.54	
Seed Law	6,560.00	6,269.25	
Dairy Cattle Cert.	4,900.00	3,612.17	
		65,670.00	62,630.98
Totals		$1,078,545.96	$1,066,245.59
Balance Unexpended			12,300.37
			$1,078,545.96

DETAIL STATEMENT OF FEDERAL AND STATE CREDITS

	Other Funds	State Funds	Totals
Balance December 1, 1935	$94,248.91	–	$94,248.91
College receipts from students and others	–	–	153,554.06
Tuition	–	113,406.00	–
Room Rent and House Rent	–	37,365.41	–
Other charges to students	–	2,782.65	–
Department sales	–	–	55,686.09
Products	–	51,169.68	–
Miscellaneous	–	4,516.41	–
Experiment Station	–	–	9,669.99
Miscellaneous	–	958.10	–
Cranberry	–	7,310.02	–
Station	–	1,401.87	–
Extension service	–	–	341.61
Correspondence	–	269.25	–
Miscellaneous	–	72.36	–
Short Courses	–	–	25,701.00
Student fees	–	24,719.00	–
Winter school	–	982.00	–
Waltham Field Station	–	–	392.45
Produce	–	392.45	–
Feed Law	–	22,529.80	22,529.80
Fertilizer Law	–	14,464.75	14,464.75
Dairy Law	–	1,193.18	1,193.18
Poultry Disease Law	–	20,087.15	20,087.15
Seed Control Law	–	183.46	183.46
Dairy Cattle Certification	–	3,789.06	3,789.06
Treasurer of the Commonwealth	–	–	855,487.32
Maintenance	–	843,263.48	–
Special Appropriation	–	6,942.18	–
Refunds on account of previous years	–	932.14	932.14
Endowment	3,151.66	–	–
Smith Hughes Fund	2,130.00	–	–
Federal Government*	–	–	313,457.96
College	84,623.23	–	–
Experiment Station	96,863.79	–	–
Extension Service	131,970.94	–	–
Bills paid by State Treasurer	–	292,619.44	292,619.44
	$412,988.53	$1,451,349.84	$1,864,338.37
*Federal			
Adams Fund of 1906	$15,000.00	–	–
Additional Federal Co-operative of 1930	5,250.00	–	–
Bankhead Jones, 1935	101,147.25	–	–
Capper Ketchum of 1928	23,869.85	–	–
Federal Smith Lever of 1914	52,557.52	–	–
Hatch Fund of 1887	15,000.00	–	–
Land Grant of 1862	7,300.00	–	–
Morrill Fund of 1890	16,666.67	–	–
Nelson Fund of 1907	16,666.67	–	–
Purnell Fund of 1925	60,000.00	–	–
	$313,457.96	–	–

DETAIL STATEMENT OF FEDERAL AND STATE PAYMENTS

	Other Funds	State Funds	Totals
College Expenses	–	–	$764,515.83
Personal Service	$70,750.35	$522,265.72	–
Maintenance	–	171,499.76	–
Replacements	–	7,108.53	7,108.53
Experiment Station	–	–	225,251.66
Personal Service	93,218.15	102,036.74	–
Maintenance	5,434.75	24,562.02	–
Extension Service	–	–	241,986.32
Personal Service	128,842.35	72,605.22	–
Maintenance	10,691.30	29,847.45	–
Short Courses	–	–	59,966.15
Personal Service	–	51,238.98	–
Maintenance	–	8,727.17	–
Waltham Field Station	–	–	11,718.25
Personal Service	–	5,814.78	–
Maintenance	–	5,903.47	–
Trustees Travel	–	657.41	657.41
Printing Reports	–	1,347.36	1,347.36
Feed Law	–	11,363.54	11,363.54
Fertilizer Law	–	15,398.95	15,398.95
Dairy Law	–	764.57	764.57
Poultry Disease Law	–	25,222.50	25,222.50
Seed Control Law	–	6,269.25	6,269.25
Dairy Cattle Certification	–	3,612.17	3,612.17
Special Appropriations	–	–	75,981.11
P.W.A. Renovation Steam and Elec. Line	–	1,935.98	–
P.W.A. Men's Dormitory	–	1,682.27	–
P.W.A. Library	–	31,548.51	–
1934 and 1935 Hospital Ward	–	3,915.20	–
1935 Construction Highways	–	9,052.44	–
1935 Initiating Nursery Industry	–	569.17	–
1935 Laying New Water Main	–	736.21	–
1935 Reconstruction Drill Hall Floor	–	608.00	–
1935 Dutch Elm Disease	–	875.96	–
1935 Reconstruction Coal Hoist	–	9,927.00	–
1935 Tennis Court	–	644.29	–
1936 Aid to Certain Students	–	5,000 00	–
1936 Emergency Needs	–	2.486.08	–
1936 Purchase of Land	–	7,000.00	–
Income	–	307,592.60	307,592.60
Refunds to State Treasurer	–	598.40	598.40
Refunds on account of previous years	–	932.14	932.14
Balance on hand	104,051.63	–	104,051.63
	$412,988.53	$1,451,349.84	$1,864,338.37

Budget for State Appropriation for Current Expenses for Year Ending November 30, 1936

	Appropriation	Expenditures	Balances
Personal Services:			
Administration	$55,230.00	$56,133.38	–$903.38
Instruction	273,406.76	270,976.65	2,430.11
Short Courses	52,340.00	51,413.98	926.02
Extension Service	72,915.32	72,605.22	310.10
Experiment Station	109,778.55	102,036.74	7,741.81
Control Service:			
Feritilzer Law	12,490.00	12,024.75	465.25
Poultriy Disease Law	19,630.00	20,255.22	–625.22
Milk-testing Insp. Law	600.00	546.25	53.75
Commercial Feedstuffs	10,740.00	9,986.63	753.37
Seed Law	5,160.00	5,377.86	–17.86
Waltham Field Station	6,100.00	5,814.78	285.22
Department Maintenance	40,976.50	39,327.90	1,648.60
Farm Maintenance	32,188.50	33,999.95	–1,811.45
Operating and Maintenance	95,503.37	96,554.17	–1,050.80
Repairs, Ordinary	22,800.00	25,098.67	–2,298.67
Dairy Cattle Certification	3,250.00	2,702.55	547.45
Total Personal Services	$813,109.00	$804,854.70	$8,254.30
Travel	$4,000.00	$4,300.77	$–300.77
Supplies and Equipment	90,100.78	89,866.03	234.75
Short Courses:			
Travel	1,000.00	1,035.35	–35.35
Supplies and Equipment	7,500.00	7,691.82	–191.82
Extension Service			
Travel	16,500.00	14,674.31	1,825.69
Supplies and Equipment	14,200.00	15,173.14	–973.14
Experiment Station:			
Travel	2,000.00	2,314.56	–314.56
Supplies and Equipment	14,021.56	22,247.46	–8,225.90
Fertilizer Control Law:			
Travel	800.00	791.71	8.29
Supplies and Equipment	2,500.00	2,582.49	–82.49

	Appropriation	Expenditures	Balances
Poultry Disease Law—Travel	1,700.00	1,758.73	−58.73
Supplies and Equipment	3,350.00	3,208.55	141.45
Milk-testing Insp. Law:			
Travel	300.00	123.16	176.84
Supplies and Equipment	100.00	95.16	4.84
Commercial Feedstuffs:			
Travel	600.00	316.22	283.78
Supplies and Equipment	1,400.00	1,060.69	339.31
Seed Law:			
Travel	–	67.80	−67.80
Supplies and Equipment	1,400.00	823.59	576.41
Waltham Field Station	8,834.59	5,903.47	2,931.12
Heat, Light and Power	69,975.23	61,922.33	8,052.90
Farm	–	−1,464.55	1,464.55
Repairs Ordinary	14,000.00	16,875.18	−2,875.18
Replacements	7,000.00	7,108.53	−108.53
Trustees Expenses	1,204.80	657.41	547.39
Printing Reports	1,300.00	1,347.36	−47.36
Dairy Cattle Crt. Travel	1,400.00	833.49	566.51
Supplies	250.00	76.13	173.87
Sub-total	265,436.96	261,390.89	4,046.07
Total Maintenance Appropriation	$1,078,545.96	$1,066,245.59	$12,300.37
Special Appropriations:			
P.W.A. Renovation Steam and Elec. Lines	$2,175.98	$1,935.98	$240.00
P.W.A. Men's Dormitory	2,085.33	1,682.27	403.06
P.W.A. Library	43,679.97	31,548.51	12,131.46
1934–35 Hospital Ward	3,934.16	3,915.20	18.96
1935 Emergency Needs	108.22	–	*108.22
1935 Construction Highways	9,828.75	9,052.44	776.31
1935 Initiating Nursery Ind.	571.52	569.17	2.35
1935 Laying New Water Main	809.01	736.21	72.80
1935 Reconstruction Drill Hall Floor	1,038.95	608.00	430.95
1935 Dutch Elm Disease	1,113.37	875.96	237.41
1935 Reconstruction Coal Hoist	9,956.70	9,927.00	29.70
1935 Tennis Court	3,000.00	644.29	2,355.71
1936 Aid to Certain Students	5,000.00	5,000.00	–
1936 Emergency Needs	2,500.00	2,486.08	13.92
1936 Electric System Harlow and Tillson Farms	2,000.00	–	2,000.00
1936 Purchase of Land	7,000.00	7,000.00	–
P.W.A. 1936 Chapel Library Building	40,000.00	–	40,000.00
Total Special Appropriation	$134,801.96	$75,981.11	$58,820.85
		Less	−108.22
			$58,712.63

*Reverted to State.

Summary of Inventory

Land	$185,815.54
College Buildings	2,580,130.92
College Equipment	1,134,696.47
Experiment Station Buildings	101,430.00
Experiment Station Equipment	168,271.20
	$4,170,344.13
College Estate (area)	736.59
Cranberry Station, Wareham (area)	28.36
Mount Toby Demonstration Forest (area)	755.27
Rifle Range	46.20
Pelham Quarry	.50
Waltham Field Station, Waltham (area)	55.39
	1,622.31

STATEMENT OF INCOME AND EXPENSE—DINING HALL

For the Year Ended November 30, 1936

Income:		
Board—less refunds	$69,980.08	
Cafeteria	9,614.69	
Special Service	1,860.54	
Sale of Provisions	850.89	
Miscellaneous Sales	523.18	
Gross Sales		$82,829.38
Cost of Good Sold:		
Inventory—Dec. 1, 1935	$3,363.39	
Purchases of Food	45,891.76	
Total	$49,255.15	
Less—Inventory Nov. 30, 1936	3,454.32	
Net Cost of Goods Sold		$45,800.83
Gross Profit		$37,028.55

Expense:			
Salary and Wages		$28,404.20	
Rent		3,000.00	
Fuel		295.74	
Laundry		1,139.45	
Supplies and Equipment:			
Equipment and Repairs	$1,199.72		
China, glassware and silver	188.17		
Linen	63.63		
Kettle and cans	124.53		
Janitor and other supplies	1,219.00		
		2,795.05	
Office Expense:			
Stationery and supplies	182.80		
Telephone	36.35		
		219.15	
Total Expense			$35,853.59
Net Profit			$1,174.96

CONSOLIDATED ENDOWMENT FUNDS

Name and Description of Funds	Operation of Fund for the Year Ending Nov. 30, 1936			Balance to Credit of Fund Nov. 30, 1936	
				Income	*Principal*
Alvord Dairy Scholarship—Gift of Henry E. Alvord (1914). Income used for graduate work in Dairy Industry.	*Receipts*				
	Balance Dec. 1, 1935	$395.75			
	Income from investment	210.00			
			$605.75		
	Balance Nov. 30, 1936			$605.75	$4,000.00
D. K. Bangs Fund—Gift of Louisa A. Baker (1909). Income used as a loan fund. Class 1871 gift added to this fund.	*Receipts*				
	Cash Balance Dec. 1, 1935	4,842.41			
	Loans outstanding Dec. 1, 1935	4,307.54			
			9,149.95		
	Income from investment	302.84			
	Income from interest on loans	191.69			
	Unearned premium	6.34			
			500.87		
	Total		9,650.82		
	Loans outstanding Nov. 30, 1936	5,074.54			
	Cash balance Nov. 30,1936	4,576.28			
				9,650.82	7,070.79
George H. Barber—Gift of Geo. H. Barber (1927). Income to be used for encouragement of general athletics	*Receipts*				
	Balance Dec. 1, 1935	553.00			
	Income from investment	250.00			
			803.00		
	Balance Nov. 30, 1936			803.00	5,000.00
Burnham Emergency—Gift of T. O. H. P. Burnham of Boston (1893). Income to be used in cases of emergency without restrictions.	*Receipts*				
	Balance Dec. 1, 1935	222.76			
	Income from investment	317.17			
			539.93		
	Payments				
	Expended under order of President		350.63		
	Balance Nov. 30, 1936			189.30	7,557.49
F. G. Crane Fund—Gift of F. G. Crane of Dalton (1924). Income used for scholarships, preference being given to residents of Berkshire County.	*Receipts*				
	Balance Dec. 1, 1935	1,528.41			
	Income from investment	1,332.54			
			2,860.95		
	Payments				
	Expended for scholarships	1,140.00			
	Expense changing bonds	6.20			
			1,146.20		
	Balance Nov. 30, 1936			1,714.75	25,250.00
John C. Cutter—Gift of Dr. John C. Cutter of Worcester, Mass. (1909). Income to be used for purchase of books on Hygiene.	*Receipts*				
	Balance Dec. 1, 1935	–			
	Income from investment	50.00			
	Unearned premium	3.17			
			53.17		
	Payments				
	Expended for books on Hygiene		14.05		
	Balance Nov. 30, 1936			39.12	1,000.00

Name and Description of Funds	Operation of Fund for the Year Ending Nov. 30, 1936			Balance to Credit of Fund Nov. 30, 1936	
				Income	*Principal*
Endowed Labor Fund—Gift of a friend of the College. (1901). Income to be used for student labor.	*Receipts*				
	Balance Dec. 1, 1935		441.57		
	Income from investment	391.01			
	Unearned premium	21.18	412.19		
	Balance Nov. 30, 1936			853.76	9,000.00
J. D. W. French Fund—Gift of the Bay State Agricultural Society (1923). Income to be used to defray expenses of judging team to National Dairy and Livestock shows, also scholarships, loans and prizes in Dairying and Forestry.	*Receipts*				
	Balance Dec. 1, 1935	1,166.41			
	Income from investment	550.00			
			1,716.41		
	Payments				
	Expended for student judging trip	698.24			
	Expended for scholarships	225.00			
	Expended for speakers—Animal Husbandry	60.00			
	Expended for speakers—Forestry	81.74			
	Expended by order of President Baker	11.91	1,076.89		
	Balance Nov. 30, 1936			639.52	10,000.00
Gassett Scholarship — Gift of Henry Gassett of Boston, Mass. (1888). Income used for scholarships.	*Receipts*				
	Balance Dec. 1, 1935		143.88		
	Income from investment	45.15			
	Unearned premium	21.18	66.33		
	Balance Nov. 30, 1936			210.21	1,500.00
Chas. A. Gleason Fund—Gift of Chas. A. Gleason of North Brookfield (1926). Income used for scholarships.	*Receipts*				
	Cash balance Dec. 1, 1935	560.80			
	Loans outstanding Dec. 1, 1935	538.00	1,098.80		
	Income from investment	241.46			
	Income from interest on loans	14.90	256.36		
	Total		1,355.16		
	Payments				
	Expended for scholarships		495.00		
	Loans outstanding Nov. 30, 1936	408.00			
	Cash balance Nov. 30, 1936	452.16			
				860.16	5,000.00
Grinnell Prize Fund—Gift of Hon. Wm. Claflin (1874). Income to be used as a prize fund and given to the two members of the graduating class who pass the bext examination in theory and practice of agriculture.	*Receipts*				
	Balance Dec. 1, 1935		347.28		
	Payments				
	Expended for prizes		50.00		
	Balance Nov. 30, 1936			297.28	1,000.00
Clarence C. Hardy Scholarship Fund — Gift of Clarence C. Hardy of Groveland, Mass. (1934). Income to be used to provide scholarships for needy and worthy young men and women, preference given to graduates of Groveland High School. This amount to be increased by further payments out of a closed bank, if, as and when paid.	*Receipts*				
	Income from investment		3.05		
	Balance Nov. 30, 1936			3.05	82.49
Hills Fund—Gift of Leonard M. and Henry Hills of Amherst (1867). Income to be used to establish and maina botanic garden. Botany, $312.60 Horticulture, $305.90	*Receipts*				
	Balance Dec. 1, 1935		69.67		
	Unearned premium	30.69			
	Income from investment	712.70	743.39		
	Total		813.06		
	Payments				
	Expended for Botany and Hort. Dept.	618.50			
	Expense changing bonds	1.55	620.05		
	Balance Nov. 30, 1936			193.01	16,114.75
Library Fund 1883–1894. This fund raised by Alumni and other friends of the college. Income is used to purchase books for library.	*Receipts*				
	Balance Dec. 1, 1935		53.08		
	Income from investment	365.38			
	Unearned premium	105.88	471.26		
	Total		524.34		

Name and Description of Funds	Operation of Fund for the Year Ending Nov. 30, 1936			Balance to Credit of Fund Nov. 30, 1936	
				Income	*Principal*
	Payments				
	Expended for books for library		498.55		
	Balance Nov. 30, 1936			25.79	10,375.52
M. S. C. Investment (1893). Investment made by vote of Trustees in 1893. Income of this fund is allowed to accumulate.	*Receipts*				
	Balance Dec. 1, 1935	144.88			
	Income from investment	1.50	146.38		
	Balance Nov. 30, 1936			146.38	550.00
Porter L. Newton Fund—Gift of Porter L. Newton of Waltham, Mass. (1926). Income to be used for scholarships.	*Receipts*				
	Balance Dec. 1, 1935		719.70		
	Income from investment	699.57			
	Unearned premium	200.00	899.57		
	Total		1,619.27		
	Payments				
	Expended for scholarships		750.00		
	Balance Nov. 30, 1936			869.27	23,411.33
Betsy Pinkerton Fund—Gift of Betsy C. Pinkerton of Worcester (1935). Income to be used for scholarships for two students of the schools of Worcester.	*Receipts*				
	Income from investment		106.86		
	Balance Nov. 30, 1936			106.86	4,500.00
Robert F. Pomeroy Library Fund — Gift of Ellen Pomeroy Moore (1928). Income to be used to purchase books for Horticulture and Landscape Architecture section of Library.	*Receipts*				
	Balance Dec. 1, 1935	48.53			
	Income from investment	75.00	123.53		
	Payments				
	Expended for books on Hort. and Lands. Arch.		54.38		
	Balance Nov. 30, 1936			69.15	1,500.00
Alan Leon Pond Memorial (1920). Given by friends of the College to establish a fund, income of which to be used for the promotion of athletics.	*Receipts*				
	Balance Dec. 1, 1935	.22			
	Income from investment	33.64	33.86		
	Payments				
	Expended for medal		22.70		
	Balance Nov. 30, 1936			11.16	744.78
Mary Robinson Fund—Gift of Mary Robinson of Medford (1874). Income used for scholarships.	*Receipts*				
	Balance Dec. 1, 1935	140.69			
	Income from investment	32.21	172.90		
	Balance Nov. 30, 1936			172.90	1,000.00
William R. Sessions Fund — Gift of Clara Markham Sessions (1918). Income used for the use of the College as the Trustees may direct.	*Receipts*				
	Balance Dec. 1, 1935		110.91		
	Income from investment	175.00			
	Unearned premium	29.25	204.25		
	Total		315.16		
	Payments				
	Expended under order of President		149.03		
	Balance Nov. 30, 1936			166.13	5,000.00
Betty Steinbugler Fund — Gift of John L. Steinbugler (1930) as a prize for best essay in English written by a junior or senior girl.	*Receipts*				
	Balance Dec. 1, 1935	4.09			
	Income from investment	6.04	10.13		
	Payments				
	Expended for prize		10.00		
	Balance Nov. 30, 1936			.13	200.00
William Wheeler Fund—Gift of William Wheeler of Concord, Mass. (1933). Income to be used for the best interest of the College in the Judgment of the Trustees.	*Receipts*				
	Balance Dec. 1, 1935	269.46			
	Income from investment	312.50	581.96		
	Payments				
	Expended under order of President		494.97		
	Balance Nov. 30, 1936			86.99	10,000.00
Whiting Street Scholarship Fund — Gift of Whiting Street of Northampton, Mass. (1899). Income used for scholarships.	*Receipts*				
	Balance Dec. 1, 1935		190.50		
	Income from investment	66.01			
	Unearned premium	21.18	87.19		
	Balance Nov. 30, 1936			277.69	2,000.00

Name and Description of Funds	Operation of Fund for the Year Ending Nov. 30, 1936			Balance to Credit of Fund Nov. 30, 1936	
				Income	*Principal*
Helen A. Whittier Scholarship Fund—Given by Massachusetts State Federation of Women's Clubs (1929). Income to be used for scholarships in Art as applied to living.	*Receipts*				
	Balance Dec. 1, 1935	46.97			
	Income from investment	143.33	190.30		
	Payments				
	Expended for scholarships		100.00		
	Balance Nov. 30, 1936			90.30	3,193.45
				$18,082.48	$155,050.60

TRUST ACCOUNT

Student Loan Fund

		Distribution	
		Notes	Cash
Original gift	$500.00	–	–
Interest earned	135.28	–	–
	$635.28	$350.00	$285.28

4-*H Club for Boys*

Original gift	$1,000.00	–	–
Interest earned	126.80	–	–
	$1,126.80	$325.00	$801.80

4-*H Club for Girls*

Original gift	$100.00	–	–
Additional gift	35.00	–	–
Interest earned	31.70	–	–
	$166.70	–	$166.70

Vincent Goldthwait Loan

Original gift	$5,175.00	–	–
Additional gift	275.00	–	–
Interest earned	142.26	–	–
	$5,592.26	$4,064.38	$1,527.88
		$4,739.38	$2,781.66
Total Trust Fund Account		$7,521.04	

Financial statement verified.
Approved.

GEO. E. MURPHY,
Comptroller.

STATISTICS

Table I.—New Appointments

A. Administrative Departments

Head Administrative Clerk, Treasurer's Office: Gunnar E. Erickson, B.S., Massachusetts State College, 1919.

B. Academic Departments

Laboratory Assistant in Chemistry: Robert E. Buck, A.B., Cornell, 1933; M.S., Massachusetts State College, 1934; Ph.D., 1936.

Laboratory Assistant in Chemistry: John Calvi, B.S., Massachusetts State College, 1931.

Professor of Physical Education: Elbert F. Caraway, B.S.A., Purdue, 1930.

Instructor in Agronomy: John N. Everson, B.S., Massachusetts State College, 1910; M.S., 1936.

Instructor in Physical Education: Wilho Frigard, B.S., Massachusetts State College, 1934.

Assistant Research Professor of Nursery Culture: George Graves, B.S., Massachusetts State College, 1923.

Instructor in Botany: Walter H. Hodge, A.B., Clark, 1934; M.S., Massachusetts State College, 1936.

Instructor in English: Leonta G. Horrigan, B.S., Massachusetts State College, 1936.

Assistant Professor of Hygiene: Florence S. Jenney, B.S., Geneva College, 1930; M.D., University of Pittsburgh, 1934.

Instructor in Olericulture: William H. Lachman, Jr., B.S., Pennsylvania State College, 1934; M.S., 1936.

Instructor in German: C. Collis Lyle, Jr., A.B., Cornell, 1933; M.A., 1934.

Instructor in Education: Albert W. Purvis, A.B., University of New Brunswick, 1931; M.Ed., Harvard, 1935.

Junior Clerk and Stenographer, Division of Home Economics: Mrs. Margaret M. Storen.

Instructor in Mathematics: John D. Swenson, B.S., in Mech. Eng., New York University, 1932; M.A. in Ed., Columbia, 1936.

Professor of Wildlife Management: Reuben E. Trippensee, B.S., Michigan State College, 1920; M.S., University of Michigan; Ph.D., 1934.

Assistant Professor of Biology: Gilbert L. Woodside, B.A., DePauw University, 1932; M.A., Harvard, 1933; Ph.D., 1936.

C. Extension Service

Assistant State Club Leader: Melby W. Brady, B.S., Ohio State University, 1920.

Junior Clerk and Stenographer, Department of Agronomy: Miriam J. Carruthers, B.A., Mt. Holyoke, 1933.

Senior Clerk and Stenographer, Department of Agricultural Economics and Farm Management: Ellen R. Connery, B.S., Massachusetts State College, 1935.

Junior Clerk and Stenographer, Department of Animal Husbandry: Evelyn S. Day.

Junior Clerk: Dorothy F. Kronvall.

Extension Specialist in Community Organization and Recreation: Lawrence V. Loy, B.S., Iowa State College, 1928; M.S., 1931.

D. Experiment Station

Assistant Research Professor of Agricultural Economics and Farm Management: Alfred A. Brown, B.S., Massachusetts State College, 1931; M.S., 1933.

Research Professor of Agronomy: William G. Colby, B.S.A., University of Illinois, 1929; M.S., Rutgers, 1932; Ph.D., 1934.

Junior Clerk and Stenographer, Department of Chemistry: Donna M. Davis.

Research Professor of Chemistry: Monroe E. Freeman, A.B., University of Minnesota, 1928; M.S., 1929; Ph.D., 1931.

Technical Assistant in Agronomy: Karol J. Kucinski, B.S., Massachusetts State College, 1934.
Research Assistant in Horticultural Manufactures: Arthur S. Levine, B.S., Massachusetts State College, 1935; M.S., 1936.
Laboratory Assistant in Agricultural Economics and Farm Management: Daniel C. Plastridge, B.S., Massachusetts State College, 1936.
Laboratory Assistant in Agricultural Economics and Farm Management: Chester W. Smith, B.S., University of Maine, 1936.
Research Assistant in Agronomy: Hrant M. Yegian, B.S., Iowa State College, 1930.

E. Short Courses

Instructor in Animal Husbandry: James C. Hillier, B.S., Iowa State College, 1934; M.S., 1936.
Assistant Professor of Rural Sociology: Kenneth C. MacArthur, A.B., Harvard, 1905; A.M., 1905; B.D., Union Theological Seminary, 1908.
Instructor in Horticultural Manufactures: Walter A. Maclinn, B.S., Massachusetts State College, 1933; M.S., Oregon State College, 1935.

Table II.—Speakers for the Year

A. Convocation

1935
Dec. 5. President Karl T. Compton, Massachusetts Institute of Technology.
Dec. 12. President Hugh P. Baker, M.S.C.
1936
Jan. 2. Fred J. Murphy, 1936, Chairman of Winter Carnival.
Jan. 9. Dr. Edgar Fauver, Head of Department of Physical Education, Wesleyan University.
Jan. 16. Frank P. Bennett, Jr., Editor, U.S. Investor, Boston, Mass.
Feb. 6. Robert J. Watt, Secretary, Massachusetts State Federation of Labor.
Feb. 13. President Zenos E. Scott, Bridgewater State Teachers College.
Feb. 20. Ralph F. Taber, 1916, President M.S.C. Associate Alumni.
Feb. 27. Grover Clark, Lecturer and Author on "The Far East."
March 5. Dean Henry S. Graves, Forestry School, Yale University.
March 12. Dr. Earle A. Prichard, Recreational Planner, National Park Service.
March 19. Dr. Joel E. Goldthwait, M.S.C., 1885, Boston, Mass.
March 26. M.S.C. Band.
April 9. President Hugh P. Baker, M.S.C.
April 16. Student Debate.
April 23. Professor Hans Kohn, Smith College.
April 30. Professor George F. Whicher, Amherst College.
May 7. Burnham Declamation Contest.
May 14. Frederick D. Griggs, Trustee, M.S.C.
May 21. Senior Convocation.
Sept. 23. President Hugh P. Baker, M.S.C.
Oct. 1. Class meetings.
Oct. 8. Rollo Walter Brown, Author and Lecturer, Cambridge, Mass.
Oct. 15. Miss Josephine Schain, "The Future of the World Community."
Oct. 22. Professor Moritz J. Bonn, Economist, London.
Oct. 29. Mr. J. E. Mercure, General Electric Co., Pittsfield.
Nov. 5. Dr. Maxwell H. Goldberg, M.S.C.
Nov. 12. Dr. A. J. Stoddard, Superintendent of Schools, Providence, R. I.
Nov. 19. In charge of Adelphia.

B. Sunday Vespers

1935
Dec. 8. Father Carol L. Bernhardt, S.J., Weston College.
Dec. 15. Dean Charles R. Brown, Yale Divinity School.
1936
Jan. 5. Professor S. Ralph Harlow, Smith College.
Jan. 12. Professor James Cleland, Amherst College.

Jan. 19. Mr. J. Paul Williams, M.S.C.
Feb. 9. Rabbi Milton Steinberg, Park Avenue Synagogue, New York City.
Feb. 16. Professor S. Ralph Harlow, Northampton, Mass.
Mar.1 & 8. Rev. David Nelson Beach, Springfield, Mass.
March 15. Rev. James Gordon Gilkey, Springfield, Mass.
March 22. President Robbins Wolcott Barstow, President, Hartford Seminary Foundation.

Sept. 27. Rev. James Gordon Gilkey, Springfield, Mass.
Oct. 4. Michael Williams, Editor, "The Commonweal."
Oct. 18. Professor Kirtley F. Mather, Harvard University.
Oct. 25. Rev. Arthur Lee Kinsolving, Trinity Church, Boston, Mass.
Nov. 1. Professor Frank Prentice Rand, M.S.C.
Nov. 8. Hon. C. Augustus Norwood, Member, Board of Lectureship, First Church of Christ, Scientist, Boston, Mass.
Nov. 15. Rev. James Gordon Gilkey, Springfield, Mass.
Nov. 22. Rabbi Abraham J. Feldman, Hartford, Conn.

Table III.—Attendance

	Registration Nov. 1, 1935			Registration Nov. 1, 1936		
	Men	Women	Total	Men	Women	Total
A. *Graduate Students*	96	26	122	105	29	134
B. Undergraduate Students						
Senior Class	153	68	221	165	59	224
Junior Class	176	63	239	187	73	260
Sophomore Class	198	78	276	201	73	274
Freshman Class	239	89	328	231	86	317
Special Students	–	–	–	4	4	8
Totals	766	298	1,064	788	295	1,083
C. *Stockbridge School*						
Second year	93	4	97	95	3	98
First year	135	4	139	133	13	146
Specials	1	2	3	2	–	2
Totals	229	10	239	230	16	246
D. Short Course Enrollment						
Winter School	151	6	157	75	11	86
Summer School	64	68	132	67	74	141
Non-Credit Courses	13	89	102	–	–	–
Totals	228	163	391	142	85	227
Grand Totals (excluding duplications)	1,319	497	1,816	1,265	425	1,690

D. Educational Meetings	1935	1936
Adult Alien Education Conference	100	–
Agricultural Alumni Seminar	129	–
Agricultural Conservation Conference	–	100
Amherst Boy Scouts, 1935 (6); 1936 (2)	200	27
Amherst Boy Scouts' Parents Night	30	–
Amherst Camera Club, 1935 (1); 1936 (4)	28	163
Amherst Christian Endeavor	60	–
Amherst Cub Scouts	20	–
Amherst Cub Scouts Parents Night	45	–
Amherst District Committee Boy Scouts	40	–
Amherst District Scout Masters, 1935 (2); 1936 (2)	82	80
Amherst Nature Club, 1935 (2); 1936 (8)	70	328
Amherst Recreation Council (2)	–	25
Amherst Women's Club, Garden Section	–	12
Amherst Women's Club, Homemaking Section	–	28
Arlington Study Group (Waltham) (6)	–	96

Basketball Clinic	–	500
Basketball Tournament Committee, 1935 (1); 1936 (3)	8	24
Berkshire County 4-H Leaders (2)	–	56
Berkshire County 4-H Poultry Club	–	30
Boston Market Gardeners Association (Waltham)	–	102
Boy Scout Financial Drive (2)	687	–
Boy Scout First Aid Course	–	15
Boy Scout Swimming Meet	–	40
Brockton Garden Club (Waltham)	–	30
Bureau of Biological Survey (representatives)	–	18
Canton Garden Club (Waltham)	–	25
Cape Cod Cranberry Growers' Association (Wareham)	375	250
C. E. Delegates on Cooperation with 4-H	30	–
Civil Service—Poultry Inspectors	–	60
Livestock Judging Teams	45	70
College Religious Workers	18	–
College Teachers of Education	29	–
Commissioners—Hampshire County Boy Scouts	15	20
Connecticut 4-H Dairy Club	35	–
Connecticut Fruit Growers Association (Wareham)	–	75
Connecticut Valley Congregational Club	100	–
Connecticut Valley Day (1936—flood)	925	–
Connecticut Valley Home Economics Association	–	45
Connecticut Valley Student Missionary Retreat	60	–
County Agricultural Agents	–	20
County Agricultural Agents' Poultry Disease Conference	–	15
Dads' Day	400	602
Eastern States Cooperation League	100	125
East Milton Garden Club (Waltham)	–	30
E. R. A. Supervisors and Agents of Women's Work	66	–
Entomologists' Society	–	100
Essex County 4-H Leaders and Members	–	10
Essex County Agricultural School Group	–	25
Excelsior Club	16	–
Extension Workers and Washington Officials	50	–
Farm and Home Week	4,500	5,000
Field Day (Waltham)	1,292	1,207
Flood Relief Conference	–	200
Florists' School (Waltham)	–	192
4-H All Stars, 1935 (2); 1936 (2)	44	70
4-H Boys' Conservation Camp	31	20
4-H Clothing Leaders	–	10
4-H Club Agents' Conference	35	15
4-H Clubs, 1935 (22 clubs); 1936 (17 clubs)	559	259
4-H Dairy Club	–	20
4-H Conservation Conference	–	15
4-H Food Leaders	25	–
4-H Garden and Dairy Day	100	–
4-H Girls' Conservation Camp	33	30
4-H Girls Final Contests	150	75
4-H Judging Contests (Waltham and M.S.C.) (1936—3)	105	92
4-H Poultry Judging Team (3)	–	32
4-H Service Clubs (5 different groups)	129	–
4-H State Camp Reunion	64	150
4-H State Camps (Junior Leaders and Adult Leaders)	150	222
4-H Youth Conference	10	–
Four Western Counties, E.R.A. Nutrition Administrators	33	–
Four Western Counties Women's Clubs	100	–
Franklin County 4-H Garden Leaders	–	20
Gloucester Garden Club (Waltham) (2)	–	41
Goodell Library Dedication	50	–

Hampden County 4-H Canning Leaders	10	–
Hampden County 4-H Garden Leaders	25	–
Hampden County Women Leaders (candy making) (2)	–	49
Hampshire County Adult Clothing Leaders (4)	–	80
Hampshire County 4-H Achievement Day	–	50
Hampshire County 4-H Annual Dairy Meeting	40	–
Hampshire County 4-H Canning Leaders	25	–
Hampshire County Dairy Meeting	43	–
Hampshire County Dress Review	20	–
Hampshire County 4-H Leaders (garden)	–	25
Hampshire County 4-H Leaders, 1935 (1); 1936 (3)	112	145
Hampshire County May Festival	–	1,000
Hampshire County Music Institute (3)	–	75
Hampshire County Pomona Grange Field Day	–	700
Hampshire County Recreation Group	30	–
Hampshire County 4-H Service Club	–	110
Hampshire County Trustees for Aid to Agriculture	–	25
Hampshire—Franklin Boy Scout Council, 1935 (1); 1936 (3)	85	75
Hampshire—Hampden County Consumers' Council	150	195
Hampshire County Consumers' Council	–	19
Harvard College Summer School Group (Waltham)	–	15
Harvard Economics Group	19	–
Harvard Garden Club (Waltham)	–	12
High School Day	353	605
Highway Improvement Institute	200	–
Holden Garden Club	–	12
Holyoke and Northampton Florists and Garden Club (2)	–	65
Home Demonstration Agents Conference	22	20
Home Garden School (Waltham)	250	–
Home Service Directors for New England Electric Co.	18	–
Horticultural Exhibition by Students	14,250	13,052
Hyde Park Garden Club (Waltham)	–	20
Ice Cream Demonstration School	–	36
Interscholastic Judging Contest	149	203
Kagawa Lecture	–	900
Lancaster Garden Club (Waltham and Amherst)	–	28
Land Bank Appraisers	30	–
Lynn Garden Lovers Club (Waltham)	–	10
Mansfield Garden Club (Waltham)	–	12
Massachusetts County Commissioners' and Sheriffs' Assn.	55	–
Massachusetts Dairy Cattle Breeders	102	–
Massachusetts Extension Workers Conference	125	130
Massachusetts Farm Bureau Directors (Waltham and Amherst)	–	30
Massachusetts Federation of Garden Clubs Leaders (Waltham)	–	30
Massachusetts Federation of Garden Clubs School	–	12
Massachusetts Fruit Growers Advisory Committee	–	20
Massachusetts Home Economic Association	150	–
Massachusetts Library Association	–	40
Massachusetts Milk Inspectors	40	40
Massachusetts Nurses' Association	55	–
Massachusetts Parent-Teacher Association (summer meeting)	–	125
Massachusetts Secondary School Principals' Conference	500	600
Massachusetts Selectmen's Association	70	–
Massachusetts Soil Conservation Committee (2)	–	22
M. S. C. Faculty Women's Clothing Group, 1935 (4); 1936 (8)	105	138
M. S. C. Women's Advisory Council	–	13
Massachusetts State Federation of Women's Clubs	–	650
Massachusetts State Grange Day	–	400
Massachusetts Town Clerks' Association	35	–
Massachusetts Veterinary Association	30	32
Medfield Garden Club (Waltham)	–	35

Middlesex County 4-H Camp	138	150
Middlesex County 4-H Delegates	96	85
Middlesex County 4-H Field Day (Waltham)	–	110
Middlesex County 4-H Garden Leaders (Waltham)	–	90
Middlesex County Vegetable Growers (Waltham)	–	20
Milking Machine Demonstration	–	30
Mothers' Day	300	350
Mount Holyoke College Group (dairy manufactures)	–	40
National Gardeners' Association—Boston Branch (Waltham)	–	22
National Shade Tree Conference (Waltham)	–	200
Nature Guide School on Wheels	28	–
New England Biological Association	–	40
New England Canoe Racing Association demonstration	–	400
New England College Librarians	–	80
New England Dairy Association	28	–
New England Grange Lecturers' Conference	1,000	–
New England Greenkeepers Association—Massachusetts Section (Waltham)	–	25
New England Institute of Cooperation	–	600
New England Marketing Officials	–	10
New England Seedsmen's Association	–	16
Norfolk County 4-H Delegates	30	40
Northeastern Farm Bureau Presidents and Secretaries	–	20
Patriarch Militant I.O.O.F. of New England	–	250
Poultry Breeders Conference	100	64
Pro Merito Society of Western Massachusetts	220	–
Recreational Conference	2,500	4,000
Religious Advisory Council Conference	30	28
R. O. T. C. Horse Show	1,000	1,100
Rural Mail Carriers	22	–
Small High School Basket-Ball Tournament	16,000	15,000
Small High School Relays	300	500
Small High School Track Meet	300	–
Southboro Garden Club	–	31
Student Home Economics Conference	74	–
Student Scientific Conference	911	–
Supervisors of Adult Alien Education	60	–
Town and County Government Conference	103	–
Valley Wheel Interscholastic Conference	23	–
Vegetable Judging School for Agents and Agricultural Instructors	10	–
Vocational Agricultural Judging Elimination Contest	100	100
Vocational Agricultural Teachers Conference	–	90
Walpole Garden Club (Waltham)	–	12
Waltham Garden Club (Waltham)	–	20
Watertown Garden Club (Waltham)	–	40
Wellesley Garden Club (Waltham)	–	10
Western Massachusetts Basket-Ball Conference	75	80
Western Massachusetts Soil Conservation Committees	–	40
Western Massachusetts Winter Sports Council (2)	–	26
Winter Sports Group	25	–
Women's Advisory Council, Extension Service	75	75
Women's Athletic Field Dedication	–	200
Total number of meetings	102	133
Total attendence	51,819	54,665

Table IV.—Statistics of Freshmen Entering in September, 1936

A. *Home Addresses of Students (Classified by Towns and Cities)*

Agawam	1	Holliston	2	Rockport	1
Amherst	22	Holyoke	14	Salem	2
Ashland	1	Hopedale	1	Sandwich	1
Athol	2	Hudson	1	Sheffield	1
Barre	1	Ipswich	1	Somerset	1
Belchertown	1	Kingston	1	Southboro	2
Belmont	2	Lanesboro	1	Southbridge	2
Beverly	3	Lawrence	1	South Hadley	7
Bloomfield, N. J.	1	Lee	1	Southwick	1
Boston	22	Leicester	1	Spencer	1
Braintree	2	Leominster	1	Springfield	12
Briarcliff Manor, N. Y.	1	Leverett	2	Stockbridge	1
Bridgewater	1	Lexington	2	Stoneham	1
Brockton	3	Littleton	1	Stoughton	1
Brookline	3	Lowell	1	Sudbury	1
Cambridge	1	Ludlow	2	Sunderland	2
Charlton	2	Lynn	4	Taunton	2
Chelmsford	1	Lynnfield	1	Truro	1
Chelsea	3	Marblehead	1	Tyringham	1
Chester	2	Marion	1	Upton	3
Chicopee	1	Marshfield	1	Valatie, N. Y.	1
Concord	1	Maynard	1	Wakefield	1
Dartmouth	1	Medford	2	Walpole	1
Deerfield	1	Mendon	1	Waltham	2
Dunbarton, N. H	1	Middleboro	1	Ware	1
Duxbury	2	Milford	1	Washington	1
Easthampton	2	Millis	2	Watertown	4
Enfield	1	Monson	2	Webster	2
Fitchburg	1	Montague	2	West Boylston	1
Foxborough	1	New Bedford	1	Westfield	6
Framingham	2	Newburyport	2	Westminster, Vt.	1
Gardner	1	Newton	3	Weston	1
Gloucester	4	North Adams	3	West Springfield	4
Great Barrington	2	Northampton	10	Westwood	1
Greenfield	7	North Brookfield	1	Williamstown	1
Groton	1	Norwood	1	Winchendon	2
Hadley	7	Palmer	6	Winchester	2
Hanover	1	Pittsfield	11	Winthrop	6
Hanson	1	Plainville	1	Woodstock, Conn.	1
Hardwick	3	Plymouth	1	Worcester	18
Harwich	1	Princeton	1	Wrentham	1
Haverhill	1	Revere	1		
Holland	1				

B. *Home Addresses (Classified by States and Countries)*

	Number	Per Cent		Number	Per Cent
Connecticut	1	.32	New Jersey	1	.32
Massachusetts	311	98.10	New York	2	.62
New Hampshire	1	.32	Vermont	1	.32
				317	100.00

C. *Home Addresses (Classified by Counties of Massachusetts)*

	Number	Per Cent		Number	Per Cent
Barnstable	3	.96	Hampshire	51	16.40
Berkshire	23	7.40	Middlesex	33	10.61
Bristol	5	1.61	Norfolk	13	4.18
Essex	23	7.40	Plymouth	13	4.18
Franklin	14	4.50	Suffolk	33	10.61
Hampden	52	16.72	Worcester	48	15.43
				311	100.00

D. *Nativity of Parents*

	Number	Per Cent
Neither parent foreign born	205	64.67
Both parents foreign born	73	23.03
Father (only) foreign born	20	6.31
Mother (only) foreign born	19	5.99
	317	100.00

E. Education of Father

	Number	Per Cent
Common School	107	33.75
High School	97	30.60
Business College	34	10.73
College or University	70	22.08
No statistics	9	2.84
	317	100.00

F. Occupation of Father

	Number	Per Cent
Agriculture and Horticulture	42	13.25
Artisans	36	11.36
Business	102	32.18
Professional	28	8.83
Miscellaneous	89	28.08
Retired	2	.63
Deceased	11	3.47
No Statistics	3	.95
Unemployed	4	1.25
	317	100.00

G. Intended Vocation of Students

	Men	Women	Number	Per Cent
1. *Farming*, including Market Gardening, Nursery business, Florist's business, Fruit growing, Management of Estates, General farming, Poultry Husbandry, Livestock Breeding	9	4	13	4.10
2. *Agricultural Business*, including sales of agricultural products and other capacities such as the fertilizer industry, the feed industry, etc.	2	–	2	.63
3. *Science*, including Chemistry, Botany, Entomology, Bacteriology, etc., in such capacities as research experts, laboratory assistants, technologists	81	18	99	31.23
4. *Landscape Architects*, Agricultural Engineers, Foresters	9	1	10	3.15
5. *Teachers*, including College Professors, High School Instructors, Specialists in Extension Education, etc.	15	5	20	6.31
6. *Professional Practitioners*, including Physicians, Surgeons, Dentists, Lawyers, Veterinarians, Ministers, etc.	43	1	44	13.88
7. *Civil Engineers*	1	–	1	.32
8. *Industrial Enterprises*, including Manufacturing, Merchandising, Advertising, Banking, Accounting, Real Estate, Insurance, etc.	5	–	5	1.58
9. Authors, Artists, Journalists, etc.	4	2	6	1.89
10. Home Economics	–	30	30	9.46
11. Social Service	10	8	18	5.68
12. Undecided	51	18	69	21.77
	230	87	317	100.00

H. Farm Experience

	Men	Women	Number	Per Cent
Brought up on a farm	32	17	49	15.46
Not brought up on a farm and having no or practically no farm experience	149	67	216	68.14
Not brought up on a farm but having had some farm experience	49	3	52	16.40
	230	87	317	100.00

I. Miscellaneous Statistics

Average age (years)	18.63

SUMMER SCHOOL ANNOUNCEMENT

For the session July 6 to August 14, 1937

MEMORIAL HALL

Erected in memory of the men of the College who died in the Great War. The center of summer school indoor recreation activities: — bowling, bridge, dancing.

STATE COLLEGE BULLETIN

Amherst, Massachusetts

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3M-2-'37. No. 9806

SUMMER SCHOOL STAFF

OFFICERS OF ADMINISTRATION

HUGH P. BAKER, D.Oec., LL.D. — *South College — President's House*
President

WILLIAM L. MACHMER, A.M. — South College — 25 Amity St.
Dean

ROLAND H. VERBECK, B.S. — South College — 14 Orchard St.
Director of Summer School

FRED J. SIEVERS, M.S. — Experiment Station Office — 35 Fearing St.
Director of Graduate School

WILLARD A. MUNSON, B.S. — South College — 101 Butterfield Ter.
Director of Extension Service

ROBERT D. HAWLEY, B.S. — South College — Mount Pleasant
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FRED C. KENNEY — South College — Mount Pleasant
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Librarian

MRS. MARY L. BROUGHTON — Abigail Adams House
Matron of Women's Dormitory

FACULTY

HAROLD D. BOUTELLE, B.S., Ch.E. — Mathematics Building — 29 Lincoln Ave.
Assistant Professor of Mathematics

THEODORE C. CALDWELL, Ph.D. — Stockbridge Hall — West St.
Assistant Professor of History and Sociology

HAROLD W. CARY, A.M. — Stockbridge Hall — R.F.D. 3, Amherst
Assistant Professor of History

JOHN A. CLAGUE, Ph.D. — Horticultural Manufactures Lab. — 15 Gray St.
Assistant Professor of Horticultural Manufactures

LLEWELLYN L. DERBY — Physical Education Building — 81 Pleasant St.
Assistant Professor of Physical Education

RICHARD C. FESSENDEN, Ph.D. — Goessmann Laboratory — North Amherst
Assistant Professor of Inorganic Chemistry

PHILIP L. GAMBLE, Ph.D. — South College — 8 Lincoln Ave.
Assistant Professor of Economics

FRANKLIN E. HEALD, A.M. — Stockbridge Hall — 3 Fearing St.
Supervisor of Agricultural Teacher-Training, State Department of Education

RUSSELL C. LARCOM, M.B.A. — South College — Shays St.
Instructor in Economics

HELEN S. MITCHELL, Ph.D. — Experiment Station Office — 30 Lincoln Ave.
Research Professor of Home Economics

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*First address is business, second is residence.

Claude C. Neet, Ph.D. Stockbridge Hall — 67 Lincoln Ave.
Assistant Professor of Psychology

Albert W. Purvis, Ed.M. Stockbridge Hall — 53 Lincoln Ave.
Instructor in Education

Victor A. Rice, M.Agr. Stockbridge Hall — 35 Woodside Ave.
Professor of Animal Husbandry; Head of Department; Head of Division of Agriculture

Frederick S. Troy, M.A. Stockbridge Hall — 35 Blue Hills Road
Instructor in English

VISITING INSTRUCTORS

L. Leland Dudley, Ph.D. Stockbridge Hall — 4 Gray St.
Superintendent of Public Schools, Amherst, Mass.

Kenneth C. Randall, M.A. Stockbridge Hall —
Professor of English, Michigan State College, East Lansing, Michigan

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*First address is business, second is residence.

GENERAL ANNOUNCEMENT

The twenty-ninth session of the summer school at Massachusetts State College will begin July 6 and continue through August 13.

Admission — There are no formal examinations for admission to the summer session. Students, both men and women, will be admitted to such courses as their preparation allows.

Purposes — The summer school program is arranged for:

1. School superintendents, principals, and teachers connected with senior and junior high schools and elementary schools, who seek advanced instruction either with or without relation to an academic degree.
2. Teachers who desire to pursue courses that will better prepare them for their work.
3. College students who desire to further their regular college work.
4. Any serious student who finds courses suited to his preparation and needs.

Full Session Courses

Registration — Registration will be held in Memorial Hall from 9 A.M. to 4:30 P.M. on Tuesday, July 6. Late registrations should be made at the Short Course Office, South College. (Telephone Amherst 900.)

Classes will begin promptly at 8 A.M. Wednesday, July 7, and will be held as announced in the description of courses until Wednesday, August 11, inclusive. Examinations will be held on Thursday and Friday, August 12 and 13.

Classes will be held on Saturday, July 10, to make up Tuesday classes missed due to registration, and on Saturday, July 17, for the holiday, July 5.

Change of Program — Notice of any proposed addition or cancellation of courses after registration must be reported at once in person at the office of the Director of the Summer Session. Students will be allowed, after securing the consent of the Director, to make such additions or cancellations up to and including July 12. After that date they will be permitted to make no changes whatever. A student attending any course is required to do the full work assigned to the class, unless registered as an auditor.

Credits — All courses are measured in terms of semester credit units. The number of college credits which may be earned in one summer cannot exceed six semester units.

Grades and Passing Mark — All undergraduate grades are given in percentages with 60 as a required minimum for passing a course successfully.

Credit Courses Offered

Fundamentals of Nutrition
Genetics and Eugenics
General Chemistry
Central Banking
Corporation Finance
Elementary Economics
Labor Problems
History of Education
The Improvement of Instruction
The Scientific Study of Educational Problems
Principles of Educational Administration
Problems in Vocational Teaching
Principles of Vocational Education
Applied Psychology
Educational Psychology
Creative Writing
Current Tendencies in American Literature
Shakespeare
The English Renaissance
History of England in Modern Times
Government of the United States
International Relations Since the World War
History of the United States 1865–1937
Food Preservation
Mathematics of Finance
Practical Computation
Recreation Activities

GRADUATE SCHOOL

Registration of Graduate Students — (Summer Session.) Graduate students not candidates for an advanced degree at Massachusetts State College must submit evidence of their graduation, but are not required to file transcripts of their past training. All such should consult the Director of the Graduate School and secure his consent before registering for any courses. Such students may obtain, upon request to the Director, an official statement of the work completed in the Summer Session.

Graduate students desiring credit toward an advanced degree at the Massachusetts State College must meet the requirements of the Graduate School at the time of their registration, as follows:

Admission — Admission to the Graduate School will be granted:

1. To graduates of the Massachusetts State College.
2. To graduates of other institutions of good standing who have received a bachelor's degree substantially equivalent to that conferred by this college.

Admission to the Graduate School does not necessarily admit to candidacy for an advanced degree, students holding a bachelor's degree being in some cases permitted to take graduate work without becoming candidates for higher degrees.

Applications for membership in the Graduate School should be presented to the Director of the Summer Session accompanied by an official transcript of the applicant's undergraduate, and any graduate work he may have had, and by a statement whether the applicant desired to work for a degree.

Registration is required of all students taking graduate courses, the registration card being obtained through the Director of the Summer Session.

Fees — For graduate students the usual Summer School expenses of tuition and special fees will be collected.

Graduate Studies — Some graduate work is available during every term of the college year. In the summer session, however, special arrangements must be made with the head of the department in which the student plans to take work, except in the case of courses offered in this circular.

During the present summer session these courses may be taken for credit towards an advanced degree.

Fundamentals of Nutrition
Genetics and Eugenics
Central Banking
Corporation Finance
Labor Problems
History of Education
The Improvement of Instruction
The Scientific Study of Educational Problems
Problems in Vocational Teaching
Principles of Vocational Education
Educational Psychology.
Creative Writing
Shakespeare
International Relations Since the World War
History of the United States 1865–1937
Mathematics of Finance
Recreation Activities

EXPENSES

There is a tuition charge of $3.50 for each semester credit. All fees must b paid to the College Treasurer, Fred C. Kenney, within one week from the openir date.

A special recreation fee of $2.50 must be paid at time of registration by eac student registering in the six weeks session for credit courses. There are no exceptior to this rule.

Total expense for the six weeks summer session will probably vary from $80.0 to $100.00 as itemized below.

	Low	*High*
Tuition (3–6 semester hours)	$10.50	$21.00
Recreation Fee	2.50	2.50
Board	36.00	42.00
Room	18.00	18.00
Books	5.00	10.00
Laboratory Supplies	2.00	4.00
Laundry	6.00	6.00
	$80.00	$103.50

Rooms (Women) — The women's dormitory is available for women students There are thirty double and thirty-eight single rooms. A uniform rate of $3.00 per wee will be charged each student. *Each one will be required to supply her own blankets sheets, pillow cases, etc.* Convenient arrangements for laundry work may be made i Amherst. *Students taking rooms in the dormitory must conform to dormitory regulations* Observance of these regulations is one of the conditions under which the rooms ar rented and failure to comply with the regulations will mean a surrender of the roon and a forfeiture of the amount paid. A student whose conduct is not satisfactory ma be asked to withdraw from the dormitory.

All requests for dormitory rooms must be made to the Treasurer of the college A deposit of $3.00 is required in order to secure a reservation in the dormitory. Students will be notified by the Treasurer, upon receipt of the fees, as to the location o the room. In case any change is desired, the request should be made immediately Deposits will not be refunded after the beginning of the summer session. The deposi is applied to total payment for the room at registration

Rooms (Men) — The new men's dormitory, Thatcher Hall, with accommoda tions for one hundred and fifty students is available for summer school men. Th same procedure should be followed in reserving rooms and paying initial fees a explained in the previous paragraph. Bed linen and blankets must be furnished b each student. The rate is $3.00 per week.

There is also an ample supply of furnished rooms in private homes convenient t the campus at moderate rates. A list of desirable locations will be available at tim of registration.

Board — The college maintains a cafeteria on the self-service plan in Drape Hall, on the college grounds. Board may be had at from $6.50 to $7.00 a week. Goo boarding places can also be secured outside of the college if desired.

RECREATION

The Summer Session offers many advantages. Amherst, a quiet college tow located in the beautiful Connecticut Valley and rich in historical lore, beckons th summer visitor. The living conditions are excellent and especially desirable fo students who wish to spend a part of the summer in study in restful surroundings.

The social life of the Summer School is attractive. There are many interesting places — groves, brooks, woods, near Amherst which are easily accessible, especially for those with cars.

Several picnic parties to such scenic spots as Mount Holyoke, Whately Glen and Sky Pasture in the Pelham Hills are arranged each summer and have come to be one of the most pleasurable parts of the recreation program.

Golf — Amherst has a fine nine-hole course and privileges are extended to summer school students at a special rate for the six weeks.

Swimming — The College swimming pool, located in the Physical Education Building, will be available from July 6 to the end of the session. Recreation fee includes this privilege without further cost to the student.

Tennis — There are several tennis courts available for summer school students.

Badminton, archery, softball and horseshoe pitching are other sports which may be enjoyed.

When desired, all equipment for these sports will be furnished except for such items as tennis balls or badminton "shuttles."

Informals — At regular intervals informal social gatherings are held in Memorial Hall with dancing, bridge, bowling, table tennis and shuffleboard.

Recreation for the Summer Session will be under the direction of Assistant Professor Llewellyn L. Derby of the Department of Physical Education.

CAMPUS FACILITIES

The College — The College campus occupies an attractive site three-quarters of a mile north of Amherst center. The College has over 700 acres of land, most of which is in a high state of cultivation, and illustrates most of the leading agricultural industries of Massachusetts. There is a large range of greenhouses of the most modern and approved type; there is a modern dairy barn with a large herd of pure-bred cattle; there are good horses, pure-bred swine, sheep, and poultry; there are fields of corn, potatoes, clover, and grass in season; orchards of apple, peach, plum, and pear trees; tracts of good forest land, nurseries, and market gardens. There are also considerable tracts devoted to experiments, many of which are of unusual interest. Then there are well-equipped departments of botany, entomology, and chemistry, dealing in the most thorough manner with these special sciences. These advantages of plant, equipment, and teaching staff are made available to Summer School students.

Libraries — The College Library contains over 100,000 bound volumes and a very large collection of pamphlets, which are of great practical value, being monographs on the technical subjects studied in the College. These pamphlets include particularly the publications of the United States Department of Agriculture and those of the State Experiment Stations of other Agricultural colleges in this country and abroad. Among the bound volumes, works on agriculture, horticulture, botany, entomology and the various sciences, connected especially with agriculture predominate, but literature, history, economics, religion, sociology and art are also well represented. More than five hundred periodicals, covering technical and general subjects, are regularly taken and both the current numbers and the back files are readily accessible.

The Library is open for readers from 8:00 A.M. to 5:00 P.M. during the summer.

There are numerous department libraries, such as those in Stockbridge Hall, and French, Marshall, and Clark Halls, where many valuable publications may be used.

The main Library has recently moved into its new building, the Goodell Library, which is the result of thirty years of effort and planning. This building offers unusual conveniences for study and research, with many separate study desks, and

space to keep materials for thesis work together. For those interested in library facilities in their home communities, the Goodell Library building is worthy of study, for its practical or functional arrangement, unusual day and night lighting, and other novel features which make it a step forward in American library design. The librarian will be very glad at any time to discuss these problems with those who may be interested.

The town of Amherst in its Jones Memorial Library offers further additional advantages of unusual interest.

College Bookshop and Soda Fountain — The College maintains a bookstore providing all textbooks used in courses. This is located in North College. A full line of paper, notebooks, and writing materials is carried. There is also a well-equipped soda fountain, and light lunches, ice cream, and smokers supplies are on sale. Since the college is situated about one mile north of the town and away from the shopping centre, it is hoped this convenient arrangement will aid students in supplying their various needs

SPECIAL PROGRAMS DURING SUMMER SESSION

July 7–14 Conservation Camp.

July 11–18 Institute on Consumers' Cooperation and Cooperative Management Training School.

The Eastern Cooperative League, which has run one-week Institutes on the State College Campus in 1935 and 1936, will return this year on July 11th. The regular Institute program including the History and Principles of the Cooperative Movement, Economics of Consumption, and Methods of Education and Organization will be open to any one eighteen years old or over.

An innovation this year will be a Management Training Course which will follow the general Institute program from July 11 to 17, but will continue for a second week. The course for Managers will include Bookkeeping and Accounting, Management Problems, and the Economics of Purchasing.

Instructors will be qualified college professors, leaders in the Cooperative Movement, and E. C. L. staff members.

Detailed information can be obtained from the E. C. L., 112 Charlton Street, New York City.

July 18–24 Eastern States Cooperative League Management Training Course.

July 15–22 4-H Junior Leaders Camp.

July 23–31 Adult 4-H Leaders Camp.

July 27–30 Farm and Home Week.

The Annual Farm and Home Week held under the direction of the College Extension Service in July brings hundreds of people to the campus for the four-day program. This year the dates are July 27 to July 30 inclusive. A fine program of lectures, with many speakers of national prominence, gives summer school students an unusual opportunity during this session. No extra fees. Plan to have your friends visit the college at that time.

NATURE GUIDE SCHOOL

A Nature Guide School has been established at the Massachusetts State College under the direction of Dr. William G. Vinal, formerly of Western Reserve University and recently Nature Education Director with the National Recreation Association.

This School will be operated at the Mt. Toby demonstration forest where the students will live and work. Two types of courses will be offered, appreciation courses for those not specializing in nature work from July 12 — 24, and credit courses leading to a Nature Guide Certificate running concurrently with the Summer School.

SUMMER SCHOOL COURSES

BIOLOGY

Fundamentals of Nutrition

This course is designed to give the student an understanding of the digestion, assimilation, and utilization of foods by the human body. The materials included in the course should be of value to teachers of physiology, hygiene, foods work and physical education, and to the student who desires a knowledge of how the body functions.

The course will include discussions of the mechanics of digestion, the sources and functions of enzymes, the functions of proteins, carbohydrates, fats, minerals and vitamins in the body, energy metabolism, circulation, respiration, excretion, and the functions of those endocrine glands primarily concerned with nutrition The relation of the fundamental principles of nutrition to food selection and health habits, and to the evaluating of fads in diets and the claims of food advertisers, will be considered.

5 class hours a week. 2 semester credits.
10:00 — 10:50 M. T. W. Th. F.
Room 28, Goessmann Laboratory. Professor Mitchell

Genetics and Eugenics

This course deals with the general problems concerned in human reproduction and inheritance. The main topics studied will consist of the physiology of reproduction, the physical basis of inheritance, and the mode of transmission of human characteristics. Consideration will also be given to such questions as the causes of variation, the relative importance of genetic and environmental influences, the mechanism of sex determination, as well as population trends, sterilization, and kindred eugenic problems.

5 class hours a week. 2 semester credits.
9:00 — 9:50, M. T. W. Th. F.
Room 102, Stockbridge Hall. Professor Rice

CHEMISTRY

General Chemistry I.

A course in General Chemistry for those who have had high or preparatory school chemistry or its equivalent. The course also provides an opportunity for teachers or others who wish to review the subject. Topics included in the course are: atomic theory, periodic system, atomic and molecular weights, simple formulae, chemical equations, acids and bases, ionization, chemical equilibrium, atomic structure and valence. The descriptive chemistry of a few of the common elements will be included. The laboratory work is the central feature of the course, and is supplemented by the lectures. The object of the course is to give the student a scientific training as well as to prepare him for advanced courses. This course is equivalent to Chemistry 3.

5 class hours and 5 2-hour laboratory periods a week. 4 semester credits.
9:00 — 9:50; 10:00 — 11:50 M. T. W. Th. F.
Lect. Room 26; Lab. Room 12, Goessmann Laboratory,
Assistant Professor Fessenden

General Chemistry II.

A course in General Chemistry for students who have had General Chemistry I, or the equivalent of a semester of college chemistry. The lectures will include discussions of chemical equilibria, oxidation and reduction, electrolytic and galvanic cells, complex compounds and valence. The descriptive chemistry of some of the elements will be studied systematically according to the groups in the Periodic Table.

The laboratory work will include experiments on ionic equilibria, complex ions, oxidation and reduction, and some preparations of a synthetic nature such as the preparation of pure potassium nitrate from potassium chloride, sodium carbonate by the Solvay process, sodium thiosulfate and potassium permanganate.

5 class hours and 5 2-hour laboratory periods a week. 4 semester credits.
2:00 — 2:50; 10:00 — 11:50 M. T. W. Th. F.
Lect. Room 26; Lab. Room 12, Goessmann Laboratory
Assistant Professor Fessenden

ECONOMICS

Central Banking

For graduate students. A study of the organization, aims, and policies of the major central banks with special reference to the Federal Reserve System.

5 class hours a week. 2 semester credits.
11:00 — 11:50 M. T. W. Th. F.
Room 110, Stockbridge Hall Assistant Professor Gamble

Corporation Finance

This course deals with the types of business organizations; the nature and growth of the corporation and its economic and social significance; promotion; types of securities used for raising capital; financial structure of various types of concerns; administration of income; control; corporate failure and reorganization.

5 class hours a week. 2 semester credits.
8:00 — 8:50 M. T. W. Th. F.
Room 102, Stockbridge Hall Mr. Larcom

Elementary Economics

This course deals with the organization and methods of modern business, money and credit, the labor movement, international trade and an outline of economic theory interpreted against the background of these problems.

5 class hours a week. 2 semester credits.
10:00 — 10:50 M. T. W. Th. F
Room 102, Stockbridge Hall Mr. Larcom

Labor Problems

An analysis of the background and character of the modern labor problem with special reference to the United States. Special problems considered are the wage system, the growth of trade unions, scientific management, the development of labor legislation and the evolution of working class movements

5 class hours a week. 2 semester credits.
9:00 — 9:50 M T. W. Th. F.
Room 110, Stockbridge Hall Assistant Professor Gamble

EDUCATION

History of Education

This course opens a long vista in the development of one very important human endeavor — the passing on to succeeding generations of the accumulated social heritage of the race. The knowledge of this history is assuming greater importance for all teachers in the minds of educational supervisors. The main support is text and supplementary reading with lectures and discussion for clarity and emphasis.

5 class hours a week. 2 semester credits.
11:00 — 11:50 M. T. W. Th. F.
Room 102, Stockbridge Hall Mr. Purvis

The Improvement of Instruction

This course is suitable for experienced teachers who wish a comprehensive view of recent tendencies in curriculum development, for supervisors, for superintendents, and for those who look forward to supervisory positions. It should not be taken by the inexperienced teacher. The entire curriculum of the public schools (twelve years) will be critically examined on the basis of criteria to be developed in class. Methods for judging the effectiveness of instruction and for improving teachers in service will be discussed. There will be opportunity for the student to study intensively a subject matter field on either the elementary school or secondary school level.

Lectures, discussions, student reports on special topics, reading.
5 class hours a week. 2 semester credits.
9:00 — 9:50 M. T. W. Th. F.
Room 113, Stockbridge Hall Dr. Dudley

The Scientific Study of Educational Problems

This course aims to familiarize the teacher with the general principles of research and the use of objective methods in curriculum construction, community surveys, textbook selection, testing pupil success, evaluation of instructional procedures and other like activities in which a teacher is expected to take part. The material covered will be of service to all teachers, but will be particularly advantageous to those undertaking thesis work.

5 class hours a week. 2 semester credits.
8:00 — 8:50 M. T. W. Th. F.
Room 110, Stockbridge Hall Mr. Purvis

Principles of Educational Administration

This course is designed to meet the needs of those who wish an understanding of the problems of administrative relationships and practices in local, state, and national areas. It approaches these problems from the standpoint of the classroom teacher. A working theory of human relationships provides the basis for a critical appraisal of present practice, including personnel problems, the supervision and organization of the professional staff, the functions of local school boards, state educational organization, relation of state to local areas, and the national government in education.

Lectures, case study and discussion, assigned reading, and reports.
5 class hours a week. 2 semester credits.
11:00 — 11:50 M. T. W. Th. F
Room 113, Stockbridge Hall Dr. Dudley

Problems in Vocational Teaching

For employed teachers and directors of vocational agriculture. Prospective candidates may be admitted by special arrangement. The course deals with problems which grow out of the experiences of Massachusetts teachers of vocational agriculture; methods and technique of teaching agriculture. Visits are made to schools and to pupils on farms. Constructive assignments bearing upon the individual experiences and prospects of the members of the class are merged with the campaigns under way for better teaching in agricultural schools. Regularly designated as Education 103.

It is desirable that, by previous correspondence, a plan may be developed with reference to individual problems and the instructor will recommend some definite data to be secured, relating to the problem, before the summer school opens.

10 class hours a week. 3 semester credits.
8:00 — 9:50, M. T. W. Th. F.
Room 317, Stockbridge Hall Mr. Heald.*

*Supervisor of Teacher Training for Agricultural Schools representing the State Department of Education.

Principles of Vocational Education

A study of the laws, rulings and policies in Federal and State supported vocational education in the United States. The philosophy and experiences leading to the legislation and the evolution of a well defined body of practice especially in Massachusetts since 1906. The types of work involved, the occupations represented, the administrative and supervisory problems, standards set, approval factors, machinery necessary and dangers to be avoided. Day schools, part-time and continuation schools, evening schools. Relation to other secondary education. While leaning toward the agricultural field, this course avoids the specific phase treated in the "Methods" courses. Mr. R. O. Small, Director of Vocational Education, and Mr. R. W. Stimson, Supervisor of Agricultural Education, usually assist in this course. Brief correspondence in advance addressed to the instructor in charge will enable the student to secure maximum values from the course. Regularly designated as Education 104.

6 class hours a week. 2 semester credits.
10:00 — 10:50, M. W.; 10:00–11:50 T. Th
Room 317, Stockbridge Hall. Mr. Heald.*

NOTE: Education 103 and 104 meet the minimum requirements in Vocational Teacher Training.

ENGLISH

Creative Writing

A course in advanced writing intended to meet individual needs. The class work will be supplemented by personal conferences, and the group must therefore be limited to fifteen students.

5 class hours a week. 2 semester credits.
10:00 — 10:50 M. T. W. Th. F.
Room 111, Stockbridge Hall Professor Randall

Current Tendencies in American Literature

A study of American prose and poetry during the last forty years, a period unusually prolific in literary experimentation with new subject matter and new forms.

5 class hours a week. 2 semester credits.
8:00 — 8:50 M. T. W. Th. F.
Room 111, Stockbridge Hall Professor Randall

Shakespeare

A study of the mind and art of Shakespeare as revealed in a consideration of about fifteen representative plays.

5 class hours a week. 2 semester credits.
9:00 — 9:50 M. T. W. Th. F.
Room 111, Stockbridge Hall Mr. Troy.

The English Renaissance

A study of the thought and culture of the English Renaissance as indicated by the non-dramatic prose and poetry of such typical Elizabethan and Jacobean writers as Spencer, Bacon, Sir Thomas Browne, Burton, Donne and Vaughan.

5 class hours a week. 2 semester credits.
11:00 — 11:50 M. T. W. Th. F.
Room 111, Stockbridge Hall Mr. Troy.

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*Supervisor of Teacher Training for Agricultural Schools representing the State Department of Education.

HISTORY

Government of the United States

A study of the structure and practical operation of our federal government. The Constitution will be read with consideration of its historical development and the interpretations placed on key clauses. The adaptation of government to new economic and social conditions is a central theme of the course, with emphasis on trends of the twentieth century. Library readings are designed to provide an understanding of problems confronting our government today.

5 class hours a week. 2 semester credits.
10:00 — 10:50 M. T. W. Th. F.
Room 201A, Stockbridge Hall Assistant Professor Caldwell

History of England in Modern Times

A survey of English History from the year 1500 to the present. Subjects treated include: rule of the Tudors, the Reformation in England, the struggle for parliamentary government, the Industrial Revolution, the growth of democracy, British imperial relations, Victorian society, England in the World War. Since the course is intended to provide a background for the study of English literature, emphasis is placed on social history as well as on constitutional developments.

5 class hours a week. 2 semester credits.
8:00 — 8:50 M. T. W. Th. F.
Room 201A, Stockbridge Hall Assistant Professor Caldwell

History of the United States 1865-1937

In this course history is viewed from the broad approach which includes social and intellectual interests as well as those of economics and politics. The development of new ideas in education, science, religion, recreation, among others is reviewed in the attempt to evaluate their part in the history of the American scene.

In its operation the course is designed to meet the needs of not only undergraduate and graduate students, but also of teachers and those adults who may be interested in studying the recent historical literature of the field. A text will be used, supplemented with readings from a selected list of special works.

5 class hours a week. 2 semester credits.
11:00 — 11:50 M. T. W. Th. F.
Room 201A, Stockbridge Hall Assistant Professor Cary

International Relations Since the World War

This course offers as an approach to the understanding of present day international conditions a review of the historical policies of the great powers, and a detailed analysis of diplomatic relations since the World War. Attention will be given to the social, economic, strategic and political factors conditioning world relationships. Assignments will be made in textbooks, newspaper and periodical literature.

5 class hours a week. 2 semester credits.
9:00 — 9:50 M. T. W. Th. F.
Room 201A, Stockbridge Hall Assistant Professor Cary.

HORTICULTURAL MANUFACTURES

Food Preservation

For teachers and students of Home Economics and food preservation. This course covers the general field of food preservation A textbook is used as a basis for classroom exercises. The laboratory work deals with the canning of fruits, vegetables, meats and poultry and the manufacture of food products including jams, jellies, conserves, marmalades, pickles, fruit butters, etc. The course offers study and practice of the most efficient methods and the facts, theories, and problems involved.

2 class hours and 3 2-hour laboratory periods a week. 2 semester credits.
8:00 — 8:50 T. Th.; 8:00 — 9:50 M. W. F.
Lect. Room 110; Lab. Room L, Horticultural Manufactures Laboratory.
Assistant Professor Clague

MATHEMATICS

Mathematics of Finance

A discussion of the mathematical principles of simple and compound interest, annuities, depreciation, valuation of bonds, insurance. Textbook and lectures.

5 class hours a week. 2 semester credits.
9:00 — 9:50 M. T. W. Th. F.
Room 12, Mathematics Building Assistant Professor Boutelle.

Practical Computation

A discussion of absolute and relative error, significant figures and round numbers, short methods and approximations, accuracy of computations based on approximate data, averages, probable error; with special reference to problems arising in the field of statistical analysis. Lectures and assigned problems.

5 class hours a week. 2 semester credits.
11:00 — 11:50 M. T. W. Th. F.
Room 12, Mathematics Building. Assistant Professor Boutelle.

PHYSICAL EDUCATION

Recreation Activities

This course is planned for teachers who may be assigned to extra-curricular work in the field of recreation in addition to their regular academic duties or individuals who are interested in community recreation.

From the theoretical side the history, nature and function of play will be considered, while the laboratory work will include practice in such activities as tennis, golf, badminton, swimming, soft ball, hiking, lawn bowls, archery and horseshoe pitching.

Program planning for recreation in the community and home will be considered and trips will be taken to nearby parks and playgrounds to observe activities in progress.

1 class hour and 2 2-hour laboratory periods a week. 1 semester credit.
2:00 — 2:50 F.; 2:00 — 3:50 T. Th.
Physical Education Building. Assistant Professor Derby.

PSYCHOLOGY

Applied Psychology

Since psychology is the study of man's mental and physical behavior, psychological principles can be applied to every phase of his life. This broad course aims to study and point out the multitudinous ways in which these principles are of use and value to us in our daily lives. The topics considered will include the following: behavior and training of the child; development of the emotions, likes and dislikes; interests and attitudes; social behavior, leadership, getting along with people; efficient methods of study and learning; personality, intelligence, and aptitudes; vocational guidance, job application, personnel selection, industrial efficiency and relations; advertising, buying and selling; legal psychology, detection of guilt and legal testimony; problems of mental hygiene, adjustment, mental abnormalities and their treatment; hypnosis, sleep and dreams; athletics; and psychological aspects of religion. Special attention will be given to individual interests. Textbook, outside readings, lectures, informal discussions, and demonstrations.

5 class hours a week. 2 semester credits.
10:00 — 10:50 M. T. W. Th. F.
Room 113, Stockbridge Hall Assistant Professor Neet

Educational Psychology

This is a practical course designed for teachers and those interested in school children or school problems. It aims to point out and explain the practical applications of psychological principles to school problems; to explain and evaluate the psychology of modern educational theories, problems and techniques; and to develop a comprehensive understanding of the child's success and difficulties in the school situation. The following topics will be considered: the child's heredity and growth; the importance of health in learning; mental hygiene of the child; factors of emotional stress and discipline that retard learning; intellectual efficiency — its development, measurement and practical implications in the school room; individual differences; learning; motivation of the individual and the class; efficient methods of study and learning; measurement of achievement by objective tests; diagnostic and remedial procedures in treating retarded learning; transfer of training, with present-day interpretations; and general intellectual training. Special interests will be given extensive consideration. Textbook, outside readings, lectures, and informal discussions.

5 class hours a week. 2 semester credits.
8:00 — 8:50 M. T. W. Th. F.
Room 113, Stockbridge Hall Assistant Professor Neet

GOESSMANN CHEMISTRY LABORATORY AND DINING HALL FROM THE CROSS WALK

OTHER EDUCATIONAL OPPORTUNITIES

AT

MASSACHUSETTS STATE COLLEGE

The Four Year Undergraduate Course

The four year course, leading to the Bachelor of Science degree, offers opportunity for major study in the fields of Agriculture, Horticulture, Physical and Biological Sciences, Social Sciences and Home Economics. Strong supporting courses are given in the Humanities and special training is offered for those who wish to prepare for teaching in any of the fields mentioned.

The requirements for admission are based upon the completion of a four year high school course or its equivalent. Fourteen and one-half units must be offered; eight and one-half in a prescribed group including English, foreign languages, mathematics, and history; and two to six in the restricted elective group selected from additional science, history, and language. Free electives not to exceed four units may be substituted for a corresponding number of units in the restricted elective group.

The normal annual expense of a student in this course is $550.00 which may be reduced to $450.00 by strict economy. These amounts cover the annual tuition charge of $100.00 for residents of the State and other strictly college expenses. They do not include amounts for clothing, travel, etc., which vary so much with individuals. Some opportunities for loans and scholarships and for work on the campus are available.

Student life is wholesome and interesting, and constitutes an important part of the educational process. Intercollegiate and intramural athletics are conducted with the aim of giving every student an opportunity to participate in some sport. Student academic activities such as musical clubs, dramatics, debating, publications and judging teams are well supervised and participation in them not only offers splendid training, but is considered a high campus honor.

For over half a century this College has offered a high grade of educational training to its students and its Alumni have taken many important responsibilities throughout the world.

For catalog and further information write the Dean, Massachusetts State College, Amherst, Mass.

The Graduate School

The purpose of the Graduate School is to provide qualified students with proper guidance in the methods of advanced study and research. Courses leading to the degrees of doctor of philosophy, master of science, and master of landscape architecture are available. Students who desire advanced courses but who do not wish to become candidates for advanced degrees also may be admitted.

Admission to the Graduate School may be granted to graduates of the Massachusetts State College and to graduates of other institutions of good standing who have received a bachelor's degree substantially equivalent to that conferred by this College.

MASSACHUSETTS STATE COLLEGE

1937 Summer Session

ADVANCE APPLICATION FOR CREDIT COURSES

July 6 — August 14

Name.....

Address.....

Are you a teacher?.....Where?.....Subject?.....

Are you a College Graduate?.....Institution, Degrees, Dates?.....

Are you a Normal School Graduate?.....Institution, Dates?.....

Are you a High School Graduate?.....Institution, Dates?.....

Are you a College Student?.....Where?.....Year.....

Do you desire graduate credit?.....Where?.....

Do you desire college credit?.....Where?.....

Please list courses in which you intend to enroll:

.....

.....

.....

.....

Send to Short Course Office, Massachusetts State College, Amherst Mass.

THE STOCKBRIDGE SCHOOL OF AGRICULTURE

A Two-Year Non-Degree Course in Vocational Agriculture

For more than nineteen years the Massachusetts State College, in addition to its degree courses, has been conducting non-degree courses for students who wish to get fundamental training in some agricultural business. More and more, high school graduates not otherwise prepared for college entrance, whose inclinations are towards the practical field of agriculture are finding the work of this department of the College well suited to their needs.

It will help you in your vocational guidance work in high school to know fully what service we can render you and your students, through the Stockbridge School of Agriculture.

The work is divided into eight major programs — dairying, animal husbandry, poultry, floriculture, horticulture, pomology, vegetable gardening, and wildlife management, one of which is selected by the student, depending on the job for which he wishes to secure training.

No entrance examinations are required. Minimum age seventeen years; minimum schooling eighth grade. Two hundred and forty-six students were enrolled in 1936. Ninety per cent are high school graduates.

The first year consists of six months' study at the College and six months of required agricultural placement training, under the supervision of the College. During the placement period the student is expected to learn much of the practical side of his particular vocation. He is recommended to a position. These positions are on farms, in dairies, greenhouses, poultry plants. The nature of the position depends on the student's particular objective.

The second year consists of eight months' study at the College. On the completion of the course a diploma is granted. Tuition is $50.00 a semester to residents of the State. Semester begins October 4, 1937.

STATE COLLEGE BULLETIN . . . . .

HIGH SCHOOL GUEST DAY

MASSACHUSETTS
STATE
COLLEGE

MAY 1
1937

A VIEW OF MEMORIAL HALL FROM ACROSS THE COLLEGE POND.
Registration headquarters on High School Guest Day are in Memorial Hall.

TWENTY-EIGHTH ANNUAL
HIGH SCHOOL GUEST DAY
AT
MASSACHUSETTS
STATE
COLLEGE

Saturday, May 1, 1937

An Invitation To
HIGH SCHOOL JUNIORS AND SENIORS
THEIR TEACHERS
and
PARENTS

To Visit the College; to Inspect the Campus, the Class Rooms, Laboratories, Dormitories; to Learn, First Hand, of the Educational advantages of Massachusetts State.

A Letter from President Baker

HUGH POTTER BAKER
PRESIDENT, MASSACHUSETTS STATE COLLEGE

To Juniors and Seniors in Massachusetts High Schools, to their Teachers and Parents:

Each year, at this time, it becomes my happy privilege to invite the young men and women who are preparing for college, in high schools throughout the state, and their teachers and parents, to come to Massachusetts State College and acquaint themselves with the educational opportunities available here.

Your State College at Amherst presents a broad and well-balanced curriculum, and offers opportunity for study in varied fields. Students at Massachusetts State may "major" in any one of six divisions into which our course of study is divided. These divisions are physical and biological science, social science, agriculture, horticulture, home economics, and physical education.

On High School Guest Day visitors to our campus are given an excellent opportunity to investigate, first hand, the scholastic opportunities at Massachusetts State, and to inspect our beautiful campus, our classrooms and laboratories.

Dean Machmer, Dean Lanphear, and members of our scholarship committee will be available throughout the day to answer questions regarding the curriculum and entrance requirements.

In the afternoon there will be varsity athletic contests, and a presentation by our student musical groups, at which visitors will be our guests.

This year marks the twenty-eighth anniversary of High School Guest Day at Massachusetts State. Through the years, the day has come to be increasingly valuable to young men and women interested in entering college; and we have enjoyed the pleasure of welcoming these visitors to our campus. I hope that many of you can be with us on Saturday, May 1.

Cordially yours,

HUGH P. BAKER.

A CLASS IN PHYSICAL EDUCATION PLAYS BADMINTON IN THE CAGE.
Major students in physical education conduct and direct classes such as this one.

High School Guest Day
Saturday, May 1, 1937

Massachusetts State College was chartered in 1863, by federal law, to be the land grant college, so-called, in this state.

The object of the College as stated in the charter was to provide a liberal and practical education, at low cost, for sons and daughters of citizens of the State. The College does provide just such education.

The curriculum is divided into six major divisions, namely: physical and biological sciences, social sciences, agriculture, horticulture, home economics and physical education. A student may do his "major" work in any one of these divisions, specializing, for instance, in chemistry, botany, English, dairy science, landscape architecture, nutrition, teacher-coaching, or in one of many other subject-matter fields.

The student body is composed of approximately 800 men and 300 women in the regular, 4-year course; and 250 men and women in the 2-year vocational school of agriculture which is called the Stockbridge School.

Average student expenses, for one year, are about $550 or $600. This includes board, room, books, fees, tuition and other expenses. Students often meet part of their expenses through jobs available to them either on the campus or in the town.

The campus is beautifully located in the northern part of the town of Amherst, and comprises over 700 acres of ground. Buildings are arranged in a large oval, circling the college pond.

Visitors to Massachusetts State College on High School Guest Day may have personal conferences with Dean Machmer, Dean Lanphear, or members of the scholarship committee; at which specific questions regarding entrance requirements, curriculum, and opportunities for financial "self-help" may be answered.

Visitors may inspect buildings, classrooms, laboratories, under the personal guidance of members of the faculty, and may learn, thereby, of the nature of courses offered by the six major divisions.

Miss Edna Skinner, advisor of women, and Miss Margaret Hamlin, vocational counselor for women, will be in Memorial Hall until noon, on May 1, to greet women visitors. Mr. Roland Verbeck, director of short courses, in charge of the Stockbridge School of Agriculture, will be in his office in South College from nine until noon to interview applicants for admission and to discuss opportunities offered by the Stockbridge School.

In the afternoon, visitors will be guests at a concert by the college musical clubs and at an intercollegiate track meet and baseball game on Alumni Field. The ball game will officially conclude the High School Guest Day program.

Thatcher Hall, Freshman Dormitory, Has 150 Men

PROGRAM
High School Guest Day
Massachusetts State College
Saturday, May 1, 1937

9:00 A.M.-12:00 M.	Registration and inspection of Campus. ALL VISITORS ARE REQUESTED TO COME AT ONCE, ON ARRIVAL IN AMHERST, TO MEMORIAL HALL AND TO REGISTER, THERE, AT THE INFORMATION DESK. STUDENT INVITATION CARDS ARE HERE EXCHANGED FOR TICKETS ADMITTING TO THE EVENTS OF THE DAY.
9:30 A.M.-10:00 A.M.	Mounted drill and exhibition by the R. O. T. C. unit, under the auspices of the military department, at the riding park south of Paige Laboratory.
10:15 A.M.	Groups of visitors, under guidance of members of the faculty, will leave Memorial Hall to visit classrooms and laboratories. Visitors should be at Memorial Hall promptly at 10:15.
11:30 A.M.-1:00 P.M.	Lunch may be secured at the college cafeteria, Draper Hall, at moderate cost.
1:15 P.M.	A presentation by the college musical clubs, Stockbridge Hall.
1:30 P.M.	Track meet, Massachusetts State vs. Trinity.
4:00 P.M.	Varsity baseball game, Massachusetts State vs. Connecticut State.

FROM 9:30 A.M. UNTIL NOON, AND FROM 1:30 P.M. UNTIL 4:30 P.M.
DEAN MACHMER AND DEAN LANPHEAR
AND
MEMBERS OF THE SCHOLARSHIP COMMITTEE
WILL BE IN MEMORIAL HALL
FOR
PERSONAL INTERVIEWS

NOTE: The program is so arranged that most visitors may return to their homes on Saturday evening. However, for those who wish to remain in Amherst on Saturday night, rooms in the homes of townspeople may be secured at $1.00 per person. Reservations may be made by addressing the Field Secretary, Massachusetts State College; but, requests for reservations should be made two weeks in advance.

For extra copies of this booklet, and for invitation cards, address the Field Secretary, Massachusetts State College.

STATE COLLEGE BULLETIN
AMHERST, MASSACHUSETTS

VOLUME XXIX APRIL, 1937 NUMBER 4

PUBLISHED EIGHT TIMES A YEAR BY THE MASSACHUSETTS STATE COLLEGE, JANUARY, FEBRUARY, MARCH, APRIL, MAY, JUNE, OCTOBER, NOVEMBER. ENTERED AT POST OFFICE, AMHERST, MASS., AS SECOND-CLASS MATTER.

PUBLICATION OF THIS DOCUMENT APPROVED BY THE COMMISSION ON ADMINISTRATION AND FINANCE
5m-3;'37 No. 91

STATE COLLEGE BULLETIN

1937

COMMENCEMENT

The College's new ten-bell Chime which now hangs in the Chapel Tower will have a prominent place in the Commencement Program.

The program and a cordial invitation to alumni and friends to join in the festivities of the Sixty-seventh Commencement.

THE CAMPUS

MASSACHUSETTS STATE COLLEGE

Amherst

June 11, 12, 13, 14, 1937

The President's Letter

To Alumni of Massachusetts State:

The returning summer beauty of the Campus reminds me of the approach of Commencement and of this privilege of extending a cordial invitation to Alumni to return for this happy annual event. There will be much of new interest on the Campus this June in addition to usual appealing events of class reunions, student dramatics, the Amherst ball game and other annual fixtures of the program.

Of course, you will want to see and hear our splendid new chime and visit the reconstructed chapel in which it now hangs. The Alumni presentation of the Dr. Butterfield portrait will be a significant and interesting event. Several of the classes are making elaborate plans for reunion programs, one of which includes, I have heard, an old fashioned pond party.

We are fortunate in our speakers for Baccalaureate and Graduation, having the promise of Rev. Albert J. Penner of the famous Edwards Church of Northampton for the former and Rev. Edmund A. Walsh, S. J., Vice President of Georgetown University, for the latter.

I can't begin to mention all of the interesting things that are planned but assure you with confidence that a pleasant and interesting occasion awaits us and I invite and urge you to come and join with us in the sixty-seventh commencement.

Cordially yours,

Hugh P. Baker.

New Goodell Library

An Exciting Ball Game is Promised

Program

FRIDAY, JUNE 11, 1937

2:00 P. M. Annual Spring Horse Show, Riding Park.
8:00 P. M. Flint Oratorical Contest, Memorial Hall.

SATURDAY, JUNE 12, ALUMNI DAY

8:30 A. M. Roister Doister Breakfast, Draper Hall.
10:30 A. M. Annual Meeting, Associate Alumni, Memorial Hall.
12:00 M. Alumni Luncheon and Speaking Program. Table Service by caterer at Physical Education Cage.
2:00 P. M. Concert on Chime.
2:45 P. M. Alumni Parade to Ball Game.
3:30 P. M. Varsity Baseball Game with Amherst, Alumni Field.
5:00 P. M. Alumnae Tea, Memorial Hall.
6:00 P. M. Fraternity and Class Reunions as arranged by organizations.
9:00 P. M. Roister Doisters in Three Plays, by Cornelius A. Wood; The Tumbler of Notre Dame, The Last Gepuire, Peggy Plum; at Bowker Auditorium.

SUNDAY, JUNE 13, BACCALAUREATE SUNDAY

9:00 A. M. Academics and Varsity Club Breakfast Meetings, Draper Hall.
11:00 A. M. Fraternity and Class Reunions as arranged by organizations.
*4:30 P. M. Baccalaureate Service at Rhododendron Garden.
Address by Rev. Albert J. Penner of Edwards Church, Northampton.
5:30 P. M. President's Reception at President's House.
8:00 P. M. Concert on the College Chime.

MONDAY, JUNE 14, CLASS DAY

10:00 A. M. Semi-Annual Meeting of the Board of Trustees.
10:00 A. M. Senior Class Day Exercises, Rhododendron Garden.
*4:00 P. M. Academic Procession from Fernald Hall.
*4:30 P. M. Graduation Exercises, Rhododendron Garden.
Address by Rev. Edmund A. Walsh, S. J., Vice President of Georgetown University.
8:00 P. M. Sophomore-Senior Hop, Drill Hall.

*If weather is inclement these exercises will be held in the Physical Education Building.

ALUMNI REUNION PROGRAM

SATURDAY, JUNE 12

10:00 A. M. Important Business Meeting of the Associate Alumni, Auditorium, Memorial Hall.

12:00 M. The Alumni Luncheon will be served by a caterer in the Cage of the Physical Education Building. Alumni, Alumnae, wives, husbands, children, are cordially invited.

1:00 P. M. Speaking Program.
President Hugh P. Baker, Alden C. Brett '12, Dr. Lewis T. Buckman '17, Ernest G. McVey '27.
Presentation of The Memorial Portrait of Kenyon L. Butterfield.

2:00 P. M. Concert on the new Chime.

2:30 P. M. Concert by the College Band and formation of the Alumni Parade, lawn of Memorial Hall.

3:30 P. M. Varsity Baseball Game — Amherst, Alumni Field. Harry C. Nottebart '27, Alumni Marshal.

REUNION CLASSES

1882 (*55 year class*) Acting secretary, Mrs. Morris B. Kingman, 91 South Pleasant St., Amherst. President C. Edward Beach, South Main St., West Hartford, Conn. Headquarters, Room 6, Memorial Hall.

1887 (*50 year class*) Secretary, Frederick H. Fowler, Box 86, Shirley, Mass. President, Frank S. Clark, Hopedale, Mass. Headquarters, Room 3, Memorial Hall.

1892 (*45 year class*) Dr. Milton Williams, Sunderland, Mass., and Dr. Edward B. Holland, Amherst, Mass., in charge of arrangements. Headquarters, Room 1 (Senate Room), Memorial Hall.

1897 (*40 year class*) Secretary, Dr. Charles A. Peters, Amherst, Mass. Headquarters, Dr. Peters' office, 2nd floor, Goessmann Laboratory.

1902 (*35 year class*) Secretary, Howard Lawton Knight, 1364 Kalmia Rd., Washington, D. C. Headquarters, Room 4, Memorial Hall.

1907 (*30 year class*) Secretary, Clinton King, 31 Elm St., Springfield, Mass. There will be an informal reunion and headquarters will be in the main lounge of Memorial Hall.

1912 (*25 year class*) Secretary, Frank B. Hills, 90 Broad St., New York City. Headquarters, Trophy Room, Physical Education Building.

1917 (*20 year class*) Secretary, Richard W. Smith, 611 Trust Co. Building, New Haven, Conn. Headquarters, Paige Veterinary Laboratory.

1922 (*15 year class*) President, Albert W. Smith, 116 Longhill St., Springfield, Mass. Headquarters, Room 7, Memorial Hall.

1927 (*10 year class*) President, Ernest G. McVey, Lake St., Hamden, Conn. Albert F. Spelman and Edward A. Connell, Amherst, in charge of local arrangements. Headquarters, Alumni Room, upstairs in Memorial Hall.

1932 (*5 year class*) John J. Foley, care B. Altman and Co., New York City, E. Joseph Thompson, 86 Pleasant St., Amherst, and Patrick E. O'Donnell, 140 Birch St., No. Abington, Mass.; reunion committee. Headquarters, Room 8, Memorial Hall.

1934 (*3 year class*) Wilho Frigard, Amherst, in charge of local arrangements. Headquarters, Physical Education Building.

1936 (*1 year class*) Domenic DeFelice, Amherst, in charge of local arrangements. Headquarters, Physical Education Building.

Alumnae Ethel Blatchford '34 in charge of plans for alumnae tea. Alumnae headquarters, Room 2, Memorial Hall.

REGISTRATION HEADQUARTERS IN MEMORIAL HALL WILL BE OPEN BEGINNING FRIDAY AFTERNOON, JUNE 11, AT 2 O'CLOCK. EVERYONE SHOULD REGISTER IMMEDIATELY UPON ARRIVAL IN AMHERST.

VOLUME XXIX MAY, 1937 NUMBER 5

Published eight times a year by the Massachusetts State College.
Entered at the Post Office, Amherst, Mass., as second class matter.

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ANNOUNCEMENT
OF
THE STOCKBRIDGE SCHOOL
OF AGRICULTURE
AT
Massachusetts State College

The two year course in practical agriculture at the Massachusetts State College is known as The Stockbridge School, named after an early president of the College. Included herein are descriptions of the various courses offered, information concerning expenses, enrollment, regulations, etc. On the last two pages will be found forms for application and certificate of citizenship.

STATE COLLEGE BULLETIN
Amherst, Mass.

Volume XXIX June, 1937 Number 6

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Publication of this Document Approved by Commission on Administration and Finance.

3,500–5–'37. No. 726.

STOCKBRIDGE HALL
Main Classroom Building and Bowker Auditorium

CALENDAR

THE STOCKBRIDGE SCHOOL OF AGRICULTURE

1937

October 4, Monday ..... Freshman Registration
October 5, Tuesday ..... Senior Registration
October 6, Wednesday ..... First semester begins for Seniors
October 12, Tuesday ..... Holiday, Columbus Day
November 11, Thursday ..... Holiday, Armistice Day
November 24–November 29, Wednesday, 12:00 M.–Monday, 8:00 A.M. ..... Thanksgiving Recess
December 18–January 3, Saturday, 12:00 M.–Monday, 8:00 A.M. ..... Christmas Recess

1938

February 2, Wednesday, 5:00 P.M. ..... First semester ends
February 7, Monday, 8:00 A.M. ..... Second semester begins
February 22, Tuesday ..... Holiday, Washington's Birthday
March 26–April 4, Saturday, 12:00 M.–Monday, 8:00 A.M. ..... Spring Recess
April 19, Tuesday ..... Holiday, Patriots' Day
May 30, Monday ..... Holiday, Memorial Day
June 3–6, Friday–Monday ..... Commencement

THE TRUSTEES

Organization of 1937

Members of the Board

	Term Expires
Mrs. Lena Edge Wilson of Pittsfield	1938
Harold L. Frost of Arlington	1938
David H. Buttrick of Arlington	1939
David J. Malcolm of Charlemont	1939
John F. Gannon of Pittsfield	1940
Davis R. Dewey of Cambridge	1940
Joseph W. Bartlett of Boston	1941
Philip F. Whitmore of Sunderland	1941
John Chandler of Sterling Junction	1942
Frederick D. Griggs of Springfield	1942
Nathaniel I. Bowditch of Framingham	1943
William C. Monahan of Framingham	1943
James T. Cassidy of Boston	1944
Mrs. Elizabeth L. McNamara of Cambridge	1944

Members Ex Officio

His Excellency Charles F. Hurley, *Governor of the Commonwealth.*
Hugh P. Baker, *President of the College.*
James G. Reardon, *Commissioner of Education.*
William Casey, *Commissioner of Agriculture.*

Officers of the Board of Trustees

His Excellency Charles F. Hurley of Cambridge, *President.*
Nathaniel I. Bowditch of Framingham, *Vice-President.*
Robert D. Hawley of Amherst, *Secretary.*
Fred C. Kenney of Amherst, *Treasurer.*

STAFF

Officers of General College Administration

HUGH P. BAKER, D. OEC., LL.D.,
President of the College

WILLIAM L. MACHMER, A.M.
Dean of the College

ROBERT D. HAWLEY, B.S.
Secretary of the College

FRED C. KENNEY
Treasurer of the College

BASIL B. WOOD, A.B.
Librarian of the College

ROLAND H. VERBECK, B.S.
Director of Short Courses

STOCKBRIDGE ADVISORY COMMITTEE

President HUGH P. BAKER

Director ROLAND H. VERBECK, Chairman
Professor LYLE L. BLUNDELL
Professor ROBERT P. HOLDSWORTH
Professor GRANT B. SNYDER
Professor REUBEN E. TRIPPENSEE
Assistant Professor LUTHER BANTA
Assistant Professor ROLLIN H. BARRETT
Assistant Professor RICHARD C. FOLEY
Assistant Professor S. CHURCH HUBBARD
Assistant Professor HARRY G. LINDQUIST
Assistant Professor MINER J. MARKUSON
Assistant Professor OLIVER C. ROBERTS
Assistant Professor HAROLD W. SMART
Assistant Professor CHARLES H. THAYER
Instructor RANSOM C. PACKARD
Secretary ROBERT D. HAWLEY

The Faculty of Instruction

LORIN E. BALL, B.S. ..... 3 Allen Street
Instructor in Physical Education

LUTHER BANTA, B.S. ..... 7 Allen Street
Assistant Professor of Poultry Husbandry

ROLLIN H. BARRETT, M.S. ..... 45 East Pleasant Street
Assistant Professor of Farm Management

ETHEL W. BLATCHFORD, B.S. ..... 27 East Pleasant Street
Instructor in Physical Education

LYLE L. BLUNDELL, B.S. ..... 5 Northampton Road
Professor of Horticulture

JAMES D. CURTIS, M.F. ..... 9 Mount Pleasant
Instructor in Forestry

WILLIAM H. DAVIS, Ph.D. ..... 12 Nutting Avenue
Assistant Professor of Botany

LLEWELLYN L. DERBY ..... 81 Pleasant Street
Assistant Professor of Physical Education

LAWRENCE S. DICKINSON, B.S. ..... 2 Farview Way
Assistant Professor of Agronomy

JOHN N. EVERSON, M.S. ..... North Amherst
Instructor in Agronomy

RICHARD C. FOLEY, M.S. ..... The Campus
Assistant Professor of Animal Husbandry

JULIUS H. FRANDSEN, M.S.A. ..... 35 Lincoln Avenue
Professor of Dairying and Head of Department

ARTHUR P. FRENCH, M.S. ..... North Amherst
Professor of Pomology and Plant Breeding

JOHN C. GRAHAM, B.S. Agr. ..... 68 Lincoln Avenue
Professor of Poultry Husbandry and Head of Department

EMORY E. GRAYSON, B.S. ..... 37 Cottage Street
Director of Placement Training

MARGARET HAMLIN, B.A. ..... 12 North East Street
Placement Officer for Women

CURRY S. HICKS, B.Pd., M.Ed. ..... 43 Sunset Avenue
Professor of Physical Education and Head of the Division of Physical Education

JAMES C. HILLIER, M.S. ..... 62 Pleasant Street
Instructor in Animal Husbandry

ROBERT P. HOLDSWORTH, M.F. ..... 49 Amity Street
Professor of Forestry and Head of Department

S. CHURCH HUBBARD ..... North Amherst
Assistant Professor of Floriculture

BENJAMIN ISGUR, M.S. ..... Farview Way
Instructor in Agronomy

FLORENCE S. JENNEY, M.D. ..... The Infirmary
Assistant Professor of Hygiene for Women

HELEN KNOWLTON, A.M. ..... 12 North East Street
Associate Professor of Home Economics

JOHN B. LENTZ, A.B., V.M.D. ..... 3 Dana Street
Professor of Veterinary Science and Head of Department

HARRY G. LINDQUIST, M.S. ..... 17 Fearing Street
Assistant Professor of Dairying

ADRIAN H. LINDSEY, Ph.D. ..... Mount Pleasant
Professor of Agricultural Economics and Head of Department of Agricultural Economics and Farm Management

KENNETH C. MACARTHUR, A.M., B.D. ..... 33 Lincoln Avenue
Assistant Professor of Rural Sociology

MERRILL J. MACK, M.S. ..... East Pleasant Street
Assistant Professor of Dairying

WALTER A. MACLINN, M.S. ..... Hatch Annex
Instructor in Horticultural Manufactures

MINER J. MARKUSON, B.S. ..... 2 Cosby Avenue
Assistant Professor of Agricultural Engineering
RUDOLPH O. MONOSMITH, B.L.A. ..... 6 Phillips Street
Instructor in Horticulture
JOHN B. NEWLON ..... North Amherst
Instructor in Agricultural Engineering
RANSOM C. PACKARD, M.S. ..... North Amherst
Instructor in Bacteriology
CLARENCE H. PARSONS, M.S. ..... The Campus
Assistant Professor of Animal Husbandry and Superintendent of Farm
GEORGE F. PUSHEE ..... North Amherst
Instructor in Agricultural Engineering
ERNEST J. RADCLIFFE, M.D. ..... 109 Butterfield Terrace
Professor of Hygiene and Head of Department of Student Health
NATHAN RAKIETEN, Ph.D. ..... 35 Blue Hills Road
Instructor in Physiology
VICTOR A. RICE, M.Agr. ..... 35 Woodside Avenue
Professor of Animal Husbandry and Head of Department, Head of Division of Agriculture
J. HARRY RICH, B.S. ..... 10 South Propsect Street
Assistant Professor of Forestry
OLIVER C. ROBERTS, B.S. ..... 10 Nutting Avenue
Assistant Professor of Pomology
JOSEPH R. ROGERS, JR. ..... 13 High Street
Instructor in Swimming
DONALD E. ROSS, B.S. ..... 12 East Pleasant Street
Instructor in Floriculture and Greenhouse Foreman
WILLIAM C. SANCTUARY, M.S. ..... 5 Allen Street
Professor of Poultry Husbandry
FRANK R. SHAW, Ph.D. ..... North Pleasant Street
Instructor in Entomology and Beekeeping
EDNA L. SKINNER, M.A. ..... 117 Butterfield Terrace
Professor of Home Economics, Head of Division, Advisor of Women
HAROLD W. SMART, LL.B. ..... 115 Butterfield Terrace
Assistant Professor of Business Law and Business English
GRANT B. SNYDER, M.S. ..... North Amherst
Professor of Vegetable Gardening and Head of Department
HARVEY L. SWEETMAN, Ph.D. ..... Leverett Street
Assistant Professor of Entomology
WILLIAM H. TAGUE, B.S. ..... 45 Pleasant Street
Assistant Professor of Agricultural Engineering
CHARLES H. THAYER ..... South East Street
Assistant Professor of Agronomy
CLARK L. THAYER, B.S. ..... 2 Mount Pleasant
Professor of Floriculture and Head of Department
RUEBEN E. TRIPPENSEE, Ph.D. ..... 4 Chestnut Street
Professor of Wildlife Management
ALDEN P. TUTTLE, M.S. ..... Birch Lawn
Assistant Professor of Vegetable Gardening
RALPH A. VAN METER, Ph.D. ..... North Amherst
Professor of Pomology and Head of Department, Head of Division of Horticulture
HENRY VANROEKEL, D.V.M., Ph.D. ..... 19 Hallock Street
Chief of Laboratory, Poultry Disease Control
JOHN H. VONDELL ..... 24 Fearing Street
Instructor in Poultry Husbandry and Foreman of Poultry Plant
HERBERT E. WARFEL, M.S. ..... North Amherst
Assistant Professor of Zoology

THE STOCKBRIDGE SCHOOL OF AGRICULTURE

A Two-Year Course in Practical Agriculture

The Stockbridge School of Agriculture, organized in 1918, is a separate and distinct department of the College providing training of a strictly vocational type in the fields of agriculture and horticulture.

Eight programs of study are offered, one of which must be selected by each student and completed as specified to be eligible for the school diploma. The present list of offerings includes:

1. Animal Husbandry . . . . . (see page 16)
2. Dairy Manufactures . . . . . (" " 19)
3. Poultry Husbandry . . . . . (" " 22)
4. Floriculture . . . . . (" " 25)
5. Fruit Growing . . . . . (" " 28)
6. General Horticulture . . . . . (" " 31)
7. Vegetable Gardening . . . . . (" " 33)
8. Wildlife Management . . . . . (" " 34)

Since its organization at the request of the Massachusetts Legislature, the school has registered over 2,000 students, graduated eighteen classes numbering more than 1,200 members, and enrolled for the last school year (1936–37) 244 young men and women.

The largest number of students comes from Massachusetts, but all the New England States are usually represented in the student body.

The value of this kind of concentrated, technical schooling, aiming directly toward preparation for a definite field of work, is amply demonstrated by the useful careers of our graduates.

General Information

Entrance Conditions:—The course is open to any student who is seventeen years of age or over and who has completed at least an elementary school course or its equivalent. There are no entrance examinations.

The Stockbridge School of Agriculture is not intended for students already enrolled in high schools. Such students should finish the high school course. Students enrolled in high schools who wish to take the course should bring a statement either from the principal of the high school or from the parent or guardian, indicating the reasons for such a change.

A graduate of a county school of agriculture or of an agricultural department of a high school may complete the course for a diploma in one year, if he is recommended by the Director of the school or the agricultural instructor. He must show a satisfactory record of practical experience and training which can be accepted in place of the first year Stockbridge program. This arrangement cannot apply to the Wildlife major and rarely to Horticulture and Dairy Manufactures.

How to enroll.—Fill out application blank in back of catalog giving all information requested. Be sure to indicate course you wish to elect. Mail this form, with citizenship certificate in back of catalog to Director of Short Courses. If application is accepted you will be notified, and certificate of citizenship will be kept on file until you register. No fees are required until registration. Registration will be held in Memorial Hall on Monday, October 4, for freshmen, and Tuesday, October 5, for seniors. All freshman students should be on campus from the day of registration until classes open on Thursday to meet required appointments for mental tests, physcial examinations, and individual photographs for office records and to have class schedules and individual programs explained.

Instruction.—The instruction is given by the college teaching staff through classroom teaching, laboratory exercises and practical work. The work of the classroom is supplemented by demonstration work in the laboratory, dairy room, greenhouse and stables. It is designed to offer funda-

mental information, and to establish the underlying reasons as well as the special methods employed in the various operations. The advantages of the college instructors and the college plant with all its resources are thus made available to young men and women electing this course.

Credit and Diploma.—In order to obtain a diploma a student is expected to have satisfactorily completed all the work called for in the general course which he has selected. A student failing to pass the requirements of summer placement training, after a suitable job has been assigned him, is not eligible for graduation until this deficiency is made up, and may not be allowed to enroll for the second year, if the Director of Placement Service considers his record to be unsatisfactory.

Graduation Requirement.—No student will be graduated unless all bills due the college are paid on or before the Wednesday preceding the graduation exercises. If paid after that date, and otherwise eligible, he may graduate the following year.

Diplomas and letters of honorable dismissal will be withheld from all students who have not paid bills due the College, or legitimate bills due the clubs or private individuals.

Beginning with the class of 1937, seniors who have borrowed from the Goldthwait Loan Fund will have diplomas retained by the College until they have paid up loans in full.

Scholarship Regulations.—At the close of each semester students receive a formal report showing the standings given in the subjects pursued by them.

If a student's semester mark in any subject falls below 60 per cent, he is thereby failed (F) in the subject. He shall be debarred from taking the final examination in that subject and must repeat it with the following class.

If the average of the semester mark and the final examinations is below 60 per cent, the student is thereby conditioned (#).

Student grades will be recorded at the end of the seventh week of each semester and again at the end of the semester. The Faculty Committee will consider all questionable grades after each marking period, and instructors will note on grade reports the names of all students whose work is seriously deficient.

When a student's record indicates failures or uniformly poor work, the Faculty Committee may recommend a close supervision of his work by the faculty adviser in his major course, or, if his scholastic grades disqualify him from further work in the school, he may be asked to withdraw at any time.

A first year student who has deficient scholastic work at the end of the first semester in February shall not be eligible for placement training until his work meets the required standard.

At the end of any semester a student who has a failure in more than one subject or is conditioned in more than two subjects may be dismissed.

RULES AND REGULATIONS

Absences from Class

(1) No unexcused absences will be allowed from classes. (2) All excuses for absence shall be presented by the student in writing, and, if approved by the Director, an excuse card will be granted to be signed by the instructor. Excuse cards must be returned promptly to the office when properly signed. (3) Students presenting excuse cards covering absences are expected to make up all work missed, to the satisfaction of the instructor. (4) Instructors are directed to reduce final grades five points for each unexcused absence occurring on a student's record at the end of any semester. (5) **No excuses will**

be accepted at the Short Course Office unless presented within two days after the student returns to classes. (6) Two tardinesses unexcused shall count as one absence. (7) Absences from classes immediately before or after a holiday are not allowed except by special permission. (8) The Short Course Office requires all students to report at once, any illness to the college physician, particularly if absence from class is likely to result from the illness. (9) Students failing to observe these rules are placed on probation, and may be asked to withdraw from the course if further violations occur.

Absences from Examinations or Tests

(1) Any student who absents himself from an appointed examination without sufficient cause shall be given zero thereon. In such case he shall not be entitled to a make-up examination unless the Director so requests. A previously announced test may, at the discretion of the instructor, be regarded as a test or as an examination.

(2) Every absence taken before enrollment (the signing of the registration card by the teacher) in a class will be counted.

Student Expenses

Tuition.—A tuition fee of $50 per semester is charged students, residents of Massachusetts, enrolled in the Stockbridge School of Agriculture. Students who are not residents of Massachusetts are charged a tuition fee of $110 each semester. The tuition per semester, charged persons not citizens of the United States is $110. **Students entering from Massachusetts, unless of voting age themselves, are required to file a statement signed by either town or city clerk, stating that the applicant's parent is a legal resident of Massachusetts.** (See form in back of catalog.)

The necessary college expenses are estimated as follows: Tuition, for citizens of Massachusetts, first year, first semester, $50; second semester (eight weeks only) $25, total $75. Second year, first semester, $50; second semester, $50, total $100. Total cost of tuition for full course, $175.

Students not residents of Massachusetts pay $110 tuition fee first year, first semester, and $55 second semester, (eight weeks only). Total tuition, first year $165. Second year, $110 each semester, total $220. Total tuition cost both years, $385.

Other costs are:

	First Year	Second Year	Total
Room in private houses	$72.00	$96.00	$168.00
Board in college cafeteria, weekly ticket 20 meals, $6.50	156.00	208.00	364.00
Laundry	20.00	30.00	50.00
Books, stationery, etc.	30.00	45.00	75.00
Totals	$278.00	$379.00	$657.00
College tuition fee for citizens of Massachusetts	75.00	100.00	175.00
	$353.00	$479.00	$832.00

These figures for board and room are estimates based on prevailing prices and are subject to change when and if conditions change.

Special Taxes Voted by Students.

	First Semester	Second Semester
College Athletic Tax	$6.75	
(For freshmen, one-half semester)		$3.00
For seniors, full semester)		6.75
Collegian Subscription	1.00	.50
Social Union	1.00	
United Religious Work	.25	.25
Stockbridge School Acitivities	1.00	1.00
Stockbridge Class Tax — usually	1.00	1.00
The Shorthorn—school yearbook		
Freshmen		3.00–4.00
Seniors		4.00–5.00

Physical Education Cage

Tuition fees and special taxes are payable at the Treasurer's Office not later than one week after date of registration.

A student who withdraws from college for any reason before a semester is half completed will have refunded to him one-half the fees paid for that semester, but one who leaves after completing more than the half semester will be allowed no rebate of fees.

The six months' placement training between the first and second years enables a student to earn from $150 to $300 depending upon his skill and general ability, and the type of work. Of this amount $100 to $200 should be saved to apply to the expenses of the second year.

Prospective students should understand that the above estimates cover expenses which may be called strictly college expenses, and that there are other financial obligations voluntarily placed upon students which they should expect to meet. Chief among these are class assessments and taxes levied for maintenance of various organizations, such as the Social Union, Athletic Association, weekly publications, etc. Such expenses vary from $15 to $30 a year. Additional financial responsibility is also assumed by students joining clubs or entering into other social activities of the college. Besides the amount necessary for clothes and traveling, the economical student will probably spend between $300 and $400 for the first year of one and one-half semesters in residence, and $400 to $500 for the second year of two semesters.

Student Aid

Self Help.—It is recommended that no new student enter without having at least $250 and preferably $350 with which to meet the expenses of the first year. **The college does not encourage students to enter without money in the expectation of earning their way entirely.** The student will find it better either to work and accumulate money before coming to college, or to take more than two years in completing his course, or, instead, to borrow money sufficient to carry him through. No student should undertake work that interferes with his studies, and students should understand that, owing to the large number of applications for employment, no one may receive a large amount of work at the college. A number of students find opportunities for earning money without depending upon the college to furnish them with work.

Federal Emergency Relief Administration funds were made available to provide part time employment for needy students during the past college year. It is expected a similar arrangement will be continued this year. Approximately ten per cent of the Stockbridge students were eligible for job opportunities under this plan. First-year students who wish to file applications for such employment should write Assistant Professor Guy V. Glatfelter at the College Placement Office. Personal interviews will be arranged after school opens.

First year students should not risk failure in their beginning studies at Stockbridge by taking on such extra work until they have, at least, tested themselves in the study program of the first semester. Certainly, it is advised to proceed cautiously in combining both extra work and athletics at the same time, if your scholastic record is at all questionable.

Rooms

Dormitory rooms are available only to students of the four year college course. Private homes in the town furnish the only source of rooms for Stockbridge students.

Rooms are inspected by the student health officer and students are expected to make their own rooming arrangements from a list of approved places available at the Short Course Office.

General Exercises

Assembly exercises are held weekly on Wednesdays, 11:00–12:00 M., and serve to bring together all Stockbridge students for a general program dealing with matters of interest to the College and the School. Among speakers who appear from time to time are the President of the College, members of the College staff, and occasionally other men who have interesting subjects to present. This weekly assembly also enables announcements concerning students and student affairs to be presented, and permits class presidents to make advance reservations for business meetings at least once a month when necessary.

Student Activities

A large number of student organizations furnish opportunity to students for work and leadership.

The Massachusetts State College Social Union was established about fifteen years ago. All students become members of the Union by paying a small fee, and in the fall and winter months the Union gives a series of entertainments, free to students and faculty. Memorial Hall is the center of student activities and contains offices for the various student organizations, including the Stockbridge School Student Council. On the first floor are located a lounging room, the Memorial Room, and the offices; in the basement, bowling alleys, pool and ping pong tables; and on the second floor an auditorium for meetings and dances. This building was erected by the alumni, students, faculty, and friends in honor of the fifty-one "Aggie" men who gave their lives in the World War.

The Stockbridge School Council is composed of representatives of the first and second year classes. This body serves as a general committee on student government and helps to maintain the best traditions and customs of the School.

A student yearbook called "The Shorthorn" is published annually by the members of the graduating class, and is usually issued in June. All students subscribe to it.

For those students who play musical instruments there is some opportunity with the College Orchestra and the College Band.

In the place of fraternities the faculty have authorized social organizations called "clubs" in the Stockbridge School. There are two such organizations in the student body, the A. T. G. Club and the Kolony Klub, both owning houses, serving as social and residential centers for their groups.

Athletics and Physical Education.—The School has its own separate athletic program with regular schedules in football, basketball, ice hockey, cross-country and winter track. Sweaters and insignia are awarded to team members and managers in these sports. The official insignia is the letter S.

The football team plays a schedule of 7 games with preparatory school and college freshman teams. The basketball team plays a 10 game schedule; the cross-country team usually runs 3 races, while 2 or 3 meets are scheduled for the winter track squad. Ice hockey affords 6 to 8 games depending on the weather.

Due to the fact that freshmen are on placement training during the spring term which leaves only seniors available, no regular team is maintained in baseball. Men desiring to play are organized into teams and an intramural league is arranged. Numerals may be given for this participation.

This athletic program is entirely under the supervision and direction of the Physical Education Department of the College and coaches are provided for all sports. Instructor Lorin E. Ball, director of the Stockbridge physical education work is coach of football, basketball, and class baseball; and Assistant Professor Llewellyn L. Derby, coach of the varsity track team, has charge of the cross-country and winter track squads.

All students are urged to participate in some sport each semester, but first year students should be sure all studies are well maintained. No squads are reduced by eliminating the inexperienced players and everyone is given an opportunity to play in games. The football squads for the past two years have consisted of approximately 50 candidates. Games have been scheduled for both the second and third teams so that every man on the squad has participated in an outside scheduled game. Both the first and second teams in basketball have regularly scheduled games.

Every care is exercised to guard against men overtaxing their strength in any sport or game to the detriment of their health. No man whose physical condition is at all questionable is allowed to play on the teams. A careful check is maintained by required physical examinations for all students given by the college physician at the opening of the school year. A second examination is made of each man before permission is granted to participate in any sport.

Students also subscribe to the college varsity games and have attendance privileges for varsity sports on the campus.

Class work in physical education for men not on athletic squads is required for both seniors and freshmen during the first semester. This consists of 2 class periods a week. The object of this course is to give the men some knowledge of games which may be of value to them in after school days, as well as to give every man an opportunity to develop sufficient control over his body to enable him to get pleasure from physical activities and to establish correct health habits.

The freshmen receive instruction in soft ball, touch football, soccer, golf, and swimming. Men may elect football or cross-country, instead of the regular class work. The seniors take up volley ball, badminton, archery, and swimming. They may also elect football or cross-country. The classes are organized into teams which compete against each other with much rivalry. Students are expected to wear old clothes during the play period, and shower baths are required at the close of each class period.

A physical education building containing a swimming pool, a great indoor cage 150 by 180 feet for all kinds of sports and games, and complete locker room and shower bath facilities provide ample equipment to carry out this program. Individual equipment is supplied to all members of the football, hockey, basketball, cross-country, and track squads.

STUDENT RELATIONS

The customary high standard of college men in honor, manliness, self-respect, and consideration for the rights of others constitutes the standards of student deportment.

Any student known to be guilty of dishonest conduct or persistent violation of rules must be reported by the instructor to the Director for discipline.

The privileges of the college may be withdrawn from any student at any time if such action is deemed advisable.

It should be understood that the college, acting through its President or any administrative officer designated by him, distinctly reserves the right not only to suspend or dismiss students, but also to name conditions under which students may remain in the institution. For example, if a student is not doing creditable work he may not only be disciplined, but he may be required to meet certain prescribed conditions in respect to his studies, even though under the foregoing rules his status as a student be not affected. The same provision applies equally to the matter of absences.

Similarly, also, it applies to participation in student activities. Though this will ordinarily be governed by the rules as already laid down, yet if in the judgment of the college authorities a student is neglecting his work on account of these activities, the privilege of participating in them may be withdrawn for such time as is considered necessary. Moreover, it may be withdrawn as a punishment for misconduct.

HEALTH SERVICE

The College endeavors to safeguard the health of all students while on the campus and for this purpose maintains a Department of Student Health, staffed by two physicians, a resident registered nurse, and a group of three Infirmary buildings.

(1) Physical examination by the Health Service is required of all undergraduate students annually, or more often if indicated. This examination is given to freshmen during matriculation week. *Evidence of a* SUCCESSFUL *smallpox vaccination is required.*

(2) The Student Health physicians have offices in the Physicial Education Building and in the Out-Patient Building, where they may be consulted during college hours.

(3) The Infirmary consists of three buildings, one for bed patients, one for contagious cases, and one for out-patient cases, where the out-patient clinic is conducted daily by one of the Student Health physicians.

(4) The students are urged to consult the resident physicians at the first sign of physical disorder, or for even minor accidents. Many severe illnesses and much lost time can be avoided by early or preventive treatment.

(5) A recent Trustee ruling grants free time in the Infirmary — when necessary for treatment — up to seven days in the school year. This free time applies to regularly enrolled undergraduate students only. For time in excess of seven days or for other bed patients, a charge of $2.00 per day is made against the patient.

(6) In addition to the charges specified in paragraph 5, the following additional expenses will be charged to the patient.

(a) *Nurses.* — In case a special nurse is required for the proper care of an individual the services and board of this nurse will be paid by the patient. Such a nurse will be under the general supervision of the resident nurse.

(b) *Professional Service.* — If a student requires continuous medical attention by a physician, he may be required to select a town physician and become responsible for fees charged by that physician.

(c) *Supplies.* — Special medical supplies prescribed by a physician will be charged to the patient.

(d) *Laundry.* — Expense for personal laundry or cleaning incurred by students while in the Infirmary will be charged to the individual student.

Goodell Library. — This fine new building completed in 1935 houses the College Library. This library contains one of the best collections in agriculture and related sciences in the country, with especial strength in entomology, botany, chemistry, horticulture, landscape architecture, soil science and animal husbandry, but with considerable collections, also in literature, history, economics, and sociology. There are over 106,000 bound books, and over 50,000 classified pamphlets giving most recent information. The periodical file contains over 500 current magazines, both scientific and popular, and a careful selection of newspapers, together with many periodical publications of learned societies. The Library is unusually rich in files of journals and publications of Experiment Stations and learned societies. The building is open on week days from 8 A.M. to 10 P.M., and from 1.30 to 4.30 and 7 to 9 P.M. on Sundays during semesters and with somewhat shorter hours during vacations and Summer School.

The building is named in memory of Henry Hill Goodell, President of the College from 1886 to 1904 and College Librarian from 1886 to 1898.

AGRICULTURAL OPPORTUNITIES FOR WOMEN

Agriculture is a field in which women have always found some opportunity. There are women farming independently, in all branches of agriculture. As a rule poultry raising, small fruits and vegetable growing and floriculture, seem to offer women an easier opportunity than dairy, stock and general farming. Women are also finding some paid positions which include farm and estate workers and managers, garden service workers and agricultural officers in state correctional institutions.

For the woman or girl whose home is already upon the farm the opportunity is exceptionally good. With the help of an agricultural education there are open to her many means of increasing her own or the farm income. With the knowledge of farm life which she already possesses, and with the possibility of securing occasional help from her family, she may be able to carry on and develop a profitable enterprise of her own. The Stockbridge School of Agriculture will afford to the women who wish to engage in farming the practical training which they will need to fit them for their work, and will open to them new doors of opportunity. The particular problems which women engaged in farming will have to meet, and the special lines of farming in which they will have favorable opportunities, will be considered in a series of conferences.

Women who are interested in taking agricultural courses should correspond with Miss Margaret Hamlin, Placement Officer for Women.

POSITIONS

The College does not guarantee positions to students registered in any of its courses, but through the Placement Service it has an opportunity to recommend students for a large number of positions. A record is kept of each student's work and experience, and of his success in positions for which he has been recommended after he has finished his course. Opportunities for trained men and women, especially those who have had farm experience, are good.

A student desiring a recommendation from the college must meet the following conditions: —

(1) He must be of good character.
(2) His previous record must be good.
(3) His work in all courses must be satisfactory.

Students who have not previously had a considerable amount of practical experience cannot, as a rule, be recommended for positions of responsibility. This is especially true of the better positions for which managers or superintendents are wanted.

VOCATIONAL PLACEMENT

The work of locating first year students for apprentice training from April to October, after the resident term is completed, is in charge of the Director of Placement Service. Placement training for women students is in charge of Miss Margaret Hamlin of the Placement Office. Every effort is made to secure satisfactory positions affording the kind of training desired by the student, but the Placement Office cannot guarantee to place every student for training, when positions are not available. In normal times placement positions are secured for all students who are eligible under these conditions.

1. Positions are secured that will enable a student to gain practical experience in his particular vocation.

2. A student desiring placement at home may arrange for such assignment if the Director of Placement approves. As a rule, it will be found better for a student to spend this six months away from home even though he plans to be employed there after finishing the course. This statement is based

on the experience of students who have already taken the course.

3. If credit is to be secured for the six months' placement training the following rules must be carefully observed.

Rules for Stockbridge Students on Placement

1. The student must interview the Director of Placement early in his first year in order that his qualifications, the type of work he wishes to pursue, and his general fitness may be determined.
2. No final arrangement for placement training may be made by the student himself until the Director of Placement has been consulted.
3. Students are required to complete their period of training without unnecessary absences.
4. No transfers are to be made by a student if he is to receive credit, until permission has been had from the Director of Placement.
5. A position may not be given up by the student until the Director of Placement has been notified.
6. A monthly report must be furnished on the form supplied, and submitted not later than the fifth of each month during his training period.
7. A student whose grade of work is regularly poor (below a 70 rating) in the classes of his major subject will not be eligible for placement training, unless recommended by the department in charge of his major work.
8. When a student fails to complete the requirements of his placement training with a satisfactory grade, he is not allowed to take the work of the second year.
9. All students are given a thorough physical examination by the Department of Physical Education at the beginning of each college year. Any disabilities liable to affect the student's placement work are noted, and, if of a serious nature, recommendations for corrective measures are supplied. Parents should understand that most kinds of agricultural work require a well-balanced combination of brawn and brain. No student whose physical condition is questionable will be accepted for placement training without a physician's certificate, and parents' approval.

It should be clearly understood by both employer and employee that the same energy, regularity and general conduct will be expected of the student during his period of placement training as is expected in his work in classes and on the campus.

It should also be noted that this six months' experience is educational in its nature. Students are expected to earn and receive a reasonable wage, but the purpose of the training is the experience gained rather than the wage earned. The scale of wages may vary in different localities, but each man's ability is given very careful thought, that he may obtain a wage that is fair to him. In the event of any misunderstanding the supervisor should be immediately informed.

DESCRIPTION OF COURSES

ANIMAL HUSBANDRY

The Animal Husbandry major fits students to cope with the practical problems of live stock production and management. It supplements and supports but does not duplicate or replace the necessary experience gained only through actual manual work in caring for animals. As a foundation, the study of breed history, live stock trends, animal anatomy and physiology is required. Special attention is given to physiological processes in breeding and feeding. Later courses show how these processes actually function under the stockman's guidance.

A herd of about 200 dairy cattle including Ayrshires, Guernseys, Jerseys, Holsteins and Milking Shorthorns, a band of about a dozen Percheron brood mares, a flock of about 60 Southdown and Shropshire sheep and a herd of about 50 Berkshire and Chester White swine, together with modern barns and equipment for housing and caring for the above live stock, and a farm of several hundred acres used primarily for the production of feed crops, gives ample scope for illustrating and giving practice in modern methods of live stock handling. The farm and barns are our laboratory; the animals and accessories our equipment.

Graduates from the Animal Husbandry major for the most part secure positions as herdsmen or farm managers.

Animal Husbandry

First Year

First Semester

Agricultural Engineering S5 (Farm Engineering)
Animal Husbandry S1 (Types and Breeds)
Bacteriology S1 (Bacteriology and Rural Hygiene)
Business Law S1
Dairy S1 (General Dairying)
Soils and Crops S1 (Soil Management)
Agricultural Opportunities S1 (Required of women students)
Hygiene S-1 (Required of women students)
*Physical Education S1
Student Health S3 (Hygiene—required of men students)
Tractor Practice
Milking, Harnessing and Teaming

Electives

Home Economics S1 (Food Selection)
*Physical Education S1 is required of men students not participating in football; also required of women students.

Second Semester

(Eight Weeks Resident Instruction Followed by Six Months Placement Training)
Animal Husbandry S2 (Principles of Feeding)
Bacteriology S2 (Continuation of Bacteriology S1)
Business English S2
Forestry S2 (The Elements of Forestry)
Fruit Growing S10 (General Course)
Soils and Crops S2 (Fertilizers)
Physical Education S2 (Required of women students)

Electives

Physical Education S4 (Basketball and Hockey)

Second Year

First Semester

Agricultural Economics S1 (Farm Economic Problems)
Agricultural Engineering S7 (Farm Structures)
Animal Husbandry S3 (Animal Breeding and Herdbook Study)
Animal Husbandry S5 (Farm Meats)
Farm Management S1 (Farm Management and Accounts)
Rural Sociology S1 (Social and Economic Problems)
Veterinary Science S1 (Animal Sanitary Science)
Physical Education S5 (Required of men students not participating in football)

Electives

Physical Education S3 (For women)

Second Semester

Agricultural Economics S2 (Marketing)
Agricultural Engineering S2 (Farm Motors)
Animal Husbandry S4 (Live Stock Production)
Animal Husbandry S6 (Dairy Cattle and Milk Production)
Poultry Husbandry S10 (General Course)
Soils and Crops S4 (Field Crops)
Veterinary Science S2 (Applied Animal Sanitary Science)

Electives

Physical Education S4 (For women)
Physical Education S4 (Basketball and Hockey)
Physical Education S6 (Baseball)
Public Speaking S-4

Animal Husbandry S-1. (Types and Breeds) I.

Includes a study of the history, development and characteristics of the various breeds of cattle, horses, sheep and swine together with a discussion of the conditions to which each breed seems best adapted. Laboratory work consists of judging and evaluating as many rings of all the classes of farm live stock as time will permit. Textbook: Vaughan, "Breeds of Live Stock in America."

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Animal Husbandry S-2. (Principles of Feeding) II.

A study of the organs of digestion, digestion and absorption of foods, digestibility of feed stuffs, utilization of feed materials in growth, maintenance, fattening, work, and milk production, and the importance of minerals and vitamins is undertaken in the first part of the course. The last part of the course is devoted to a study of feeding standards and methods of calculating rations. The principles included in this course are designed to serve as a background for the practical feeding studies in later courses. Textbook: Henry and Morrison, "Feeds and Feeding."

5 class hours a week. Credit, 5.

Animal Husbandry S-3. (Animal Breeding and Herdbook Study) I.

Includes a study of the physiology of reproduction and of animal genetics as well as the art of breeding. Among the topics included are the Origin and Domestication of Farm Animals; Modern Theories of Heredity, Variation and Sex Determination; the Systems of Breeding — Cross-, Out-, Line-, and Close-Breeding; and the one paramount problem of animal breeding, namely, Selection. Considerable pedigree work in the student's favorite breed is also included. Prerequisites: Animal Husbandry S-1 and Animal Husbandry S-2. Textbook: Rice, "Breeding and Improvement of Farm Animals."

3 class hours and 1 2-hour laboratory period a week. Credit, 4.

Animal Husbandry S-4. (Live Stock Production) II.

This course includes studies of the production of horses, beef cattle, sheep and swine with emphasis on their place in New England agriculture. Attention is given to the general situation and outlook, distribution and adaptability of breeds, equipment, feeding, systems of management, management problems, disease control, fitting and showing, and practice in such skills as shearing, docking and castrating. Prerequisites: Animal Husbandry S-1 and Animal Husbandry S-2. Textbook: Henry and Morrison, "Feeds and Feeding."

3 class hours and 1 2-hour laboratory period a week. Credit, 4.

Animal Husbandry S-5. (Farm Meats) I.

This course includes a survey of the packing industry and follows the product (i. e. beef, pork, lamb and veal) from the feed-lot to the consumer's table. Practice is afforded in classifying animals as to market class and grade and in slaughtering, dressing, cutting and curing beef, pork, lamb and veal. At the end of the course a trip will be taken to several large packing houses in Boston consuming one day and costing about $10.00. Prerequisites Animal Husbandry S-1, Animal Husbandry S-2. Textbook: Tomhave, "Meat and Meat Products."

1 class hour and 2 2-hour laboratory periods a week. Credit, 3.

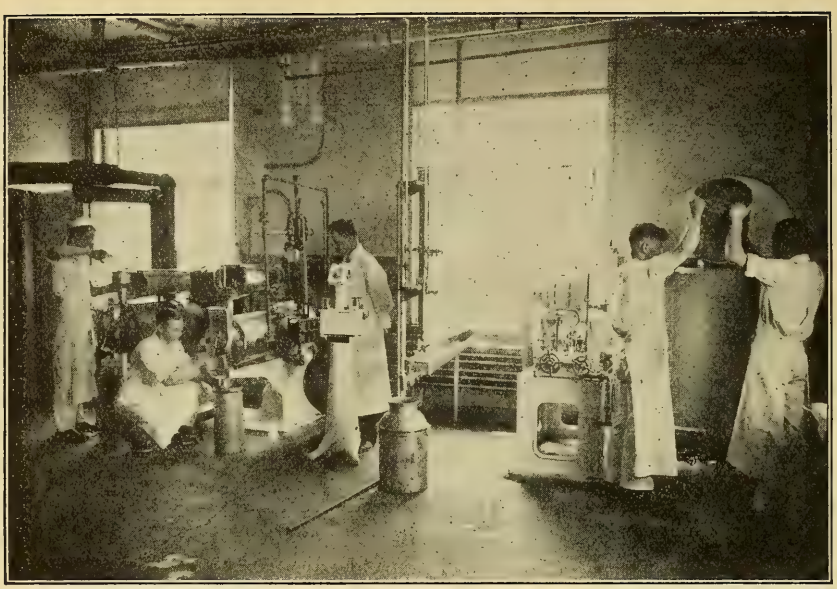
Animal Husbandry S-6. (Dairy Cattle and Milk Production) II.

For Seniors. — This course treats all phases of dairy cattle production and management. The student is provided with an opportunity to study and seek the solution to the various economic, nutritional, genetic and managerial problems concerned in successful dairying. Lectures will be supplemented with talks by specialists in the various fields. Laboratory will consist of a detailed study of methods used on the college farm, with practice in the various skills necessary for the herdsman or showman.

Trips to purebred live stock farms in the state for the purpose of inspection and advanced dairy cattle judging will be required on five Saturdays during the spring semester. The cost for transportation will not exceed $10.00.

4 2-hour laboratory periods a week. Credit, 4.

Note: — Every student in this course must qualify in tractor practice, milking, harnessing, and teaming, single and double. Arrangements for practice periods and examinations by special assignment. No student will be put in placement training who has not satisfied these preliminary requirements.



Ice Cream Making

Meats Class in College Abattoir

DAIRY MANUFACTURES

The Dairy Manufactures course is designed to fit men for positions with market milk concerns, creameries, ice cream factories, and specialized dairy farms.

All dairy manufacturing courses are given in the dairy building (Flint Laboratory), a modern building designed especially for dairy work. The building is equipped with the newest and best types of dairy and creamery machinery.

The market milk room contains two complete pasteurizing units, a clarifier, separator, milk heater, automatic bottle filler and capper, and other necessary equipment for the proper handling of market milk.

The ice cream making room contains a pasteurizing vat, homogenizer, cooler, brine and direct expansion freezers, filling machines, and additional equipment such as is found in a modern ice cream plant.

The room designed for cheese making is equipped with cheese vats, draining racks, presses, mixer, etc. The butter making room has various types of hand and power churns, workers, scales, and other accessories.

The separator room contains a collection of separators and exhibits of modern equipment and supplies for the dairyman.

The testing laboratories are well equipped with apparatus for the Babcock, Mojonnier, and other tests used for the determination of fat, acidity, and general cleanliness of milk and milk products.

Dairy Manufactures

First Year

First Semester

Agricultural Engineering S1 (Farm Motors)
Animal Husbandry S1 (Types and Breeds)
Bacteriology S1 (Bacteriology and Rural Hygiene)
Business Law S1
Dairy S1 (General Dairying)
Soils and Crops S1 (Soil Management)
Agricultural Opportunities S1 (Required of women students)
Hygiene S-1 (Required of women students)
*Physical Education S1
Student Health S3 (Hygiene — required of men students)
Tractor Practice
Milking, Harnessing and Teaming

Electives

Home Economics S-1 (Food Selection)
*Physical Education S1 is required of men students not participating in football; also required of women students.

Second Semester

(Eight Weeks Resident Instruction Followed by Six Months Placement Training)
Animal Husbandry S2 (Principles of Feeding)
Bacteriology S2 (Continuation of Bacteriology S1)
Dairy S2 (Testing Milk Products)
Business English S2
Horticultural Manufactures S4
Soils and Crops S2 (Fertilizers)
Physical Education S2 (Required of women students)

Electives

Physical Education S4 (Basketball and Hockey)

Second Year

First Semester

Agricultural Economics S1 (Farm Economic Problems)
Business Management S3
Dairy S3 (Butter and Ice Cream Making)
Rural Sociology S1 (Social and Economic Problems)
Veterinary Science S1 (Animal Sanitary Science)
Physical Education S5 (Required of men students not participating in football)

Electives

Physical Education S3 (For women)

Second Semester

Agricultural Economics S2 (Marketing)
Agricultural Engineering S6 (Dairy Mechanics)
Bacteriology S4 (Dairy Bacteriology)
Dairy S4 (Market Milk, Cheese, and Concentrated Milk Products)

Electives

Physical Education S4 (For women)
Physical Education S4 (Basketball and Hockey)
Physical Education S6 (Baseball)
Public Speaking S-4

Dairy S-1. (General Dairying) I.

This course takes up the question of the importance of dairying in the United States, and especially in the New England States, giving the development of dairying from the earliest to the present time. It covers the secretion, composition, and properties of milk; reasons for variation in the per cent in fat in different samples of milk; the Babcock test for fat in milk and other dairy products; other common milk tests; the advantage of testing

herds, Herd Improvement Associations, advanced registry work; the handling of market milk; soft cheese making, ice cream making, and butter making as applied to general farm conditions. The laboratory work consists in testing milk and dairy products for butter fat, solids, and acidity, together with some dairy plant experience in milk handling, butter making, cheese making, and ice cream making.

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Dairy S-2. (Testing Milk Products) II.

In this course a study is made of the common tests used in dairy manufacturing processes.

The lectures in this course include a discussion of the application of tests, what they indicate and their importance in the dairy plant.

The laboratory work consists of a study of the various dairy laboratory tests such as sediment, flavor, and total solids of milk; moisture fat and salt determination in butter; moisture test of cheese; the operation of the Mojonnier tester and the modified Babcock tests for fat in dairy products.

In addition to the testing work students will be required to arrange for work about the plant in order to become familiar with dairy plant practices and the operation of dairy machinery.

1 class hour and 2 2-hour laboratory periods a week. Credit, 3.

Dairy S-3. (Butter and Ice Cream Making) I.

This course deals with butter making and ice cream making. In that part of the course on butter making, the principal factors studied are: methods of separating milk, the history, selection, care and use of separators; the pasteurization and ripening of cream; testing cream for acidity; the making and use of starters; a study of churns and churning; modern methods of making butter; marketing butter; tests for moisture, salt, fat, and curd content of butter.

In that part of the course on ice cream making, a careful study is made of modern methods of manufacturing the common frozen dairy products (ice cream, sherbets, and ices, also frozen puddings, punches, mousses, etc.)

The lecture work includes a discussion of the history of ice cream making, the ingredients found in ice cream, methods of preparing and standardizing mixes, the freezing process, methods of hardening, marketing, and distribution of the finished product.

The laboratory work involves the preparation and standardization of ice cream mixes, the freezing of ice cream and other frozen dairy products, and laboratory tests for butter fat and total solids in ice cream.

3 class hours and 3 3-hour laboratory periods a week. Credit, 8.

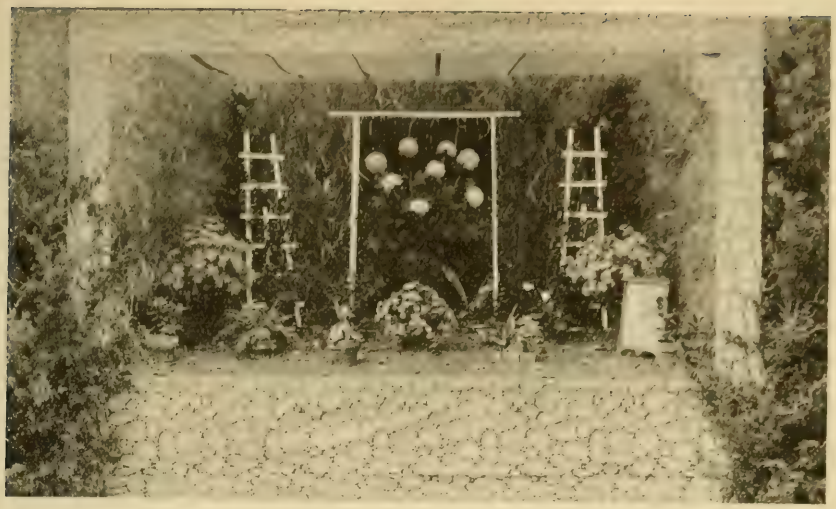
Dairy S-4. (Market Milk, Cheese, and other Milk Products) II.

In this course the different types of cheese are studied. In lectures and laboratory practice the manufacture of hard and soft cheese (cheddar, olive, nut, neufchatel, cream, cottage, etc.) is considered either from the standpoint of marketing the entire milk supply of the dairy through these products or of the economic disposal of surplus milk.

Lectures are given covering the manufacture of the various concentrated products as sweetened condensed, evaporated, and powdered milk.

Under market milk, a study of the development of the market milk industry is made. Attention is given to the necessary essentials in producing a high grade milk; the economics of milk production; food value and uses; the advantages of cooperative milk producers' organizations; the various methods of marketing milk; the transportation, processing and delivery of milk; manufacture and marketing of surplus milk in the form of by-products as cream, cultured buttermilk, chocolate milk, etc.

The laboratory work consists of receiving and making quality tests on milk and the operation of the machinery used in processing market milk.



Student Exhibit at College Horticultural Show

Field Study of Tillage Implements

In addition, trips to dairy farms and a one-day trip, with estimated cost of $5.00, will be made to city milk plants.

3 class hours and 3 3-hour laboratory periods a week. Credit, 8.

Dairy S-6. (General Course for Poultry Majors) II.

This course takes up the importance of dairying in the United States, and especially in the New England States.

Lectures will be given on secretion, composition, and properties of milk, reasons for variation in per cent of butter fat in different samples of milk. The Babcock test for fat in milk, cream, skim milk and buttermilk, the advantages of testing herds, herd improvement associations, advanced registry work; the handling of market milk, soft cheese making, ice cream making, and butter making, as applied to general farm conditions.

The laboratory work consists mainly in testing milk and dairy products for butter fat, solids, and acidity, together with some laboratory work in milk handling, butter making, cheese making, and ice cream making.

2 class hours and 2 2-hour laboratory periods a week. Credit, 4.

Note: — Every student in this course must qualify in tractor practice, milking, harnessing, and teaming, single and double. Arrangements for practice periods and examinations by special assignment. No student will be put in placement training who has not satisfied these preliminary requirements.

POULTRY HUSBANDRY

Eight courses are offered by this department. One is a general course designed particularly to equip the student with fundamental principles underlying successful poultry raising as related especially to the farm flock. The other seven courses are for students who desire to specialize in poultry culture.

There is a broad field of opportunity for adequately trained men in the commercial handling and sale of poultry and poultry products, specialists in incubation, brooding and rearing, and assistants or managers of commercial poultry farms. Good profits and wages await well-equipped men and women in these and other branches of poultry work.

This department is well equipped to offer practical instruction in poultry husbandry. Our quarters and equipment in Stockbridge Hall provide ample facilities for efficient classroom and laboratory teaching.

Our practical laboratory (college poultry plant) comprises about 1,500 adult birds, divided into some 40 pens of various designs, the flocks ranging in size from 10 to 250 birds; several lamp incubators, as well as five mammoth machines; brooding and rearing facilities for 5,000 chicks, including many styles of coal, oil, wood, and electric brooders and chick batteries, also two types of cages for laying hens; facilities for practice in breeding, feeding, fattening, killing, picking, candling and grading eggs, caponizing, judging, mixing rations; construction of poultry houses and appliances, etc.

In addition to the actual practice work performed, the student has an opportunity to keep under observation practical experiments and demonstrations continually under way for the instruction of students and practical poultry keepers.

Poultry Husbandry

First Year

First Semester

Bacteriology S1 (Bacteriology and Rural Hygiene)
Business Law S1
Poultry Husbandry S1 (Judging and Housing)
Poultry Husbandry S3 (Feeding)
Soils and Crops S1 (Soil management)
Agricultural Opportunities S1 (Required of women students)
Hygiene S1 (Required of women students)
*Physical Education S1
Student Health S3 (Hygiene — required of men students)
Tractor Practice
Milking, Harnessing and Teaming

Electives

Home Economics S-1 (Food Selection)
*Physical Education S1 is required of men students not participating in football; also required of women students.

Second Semester

(Four Weeks Resident Instruction Followed by Six Months Placement Training)
Dairy S6 (General Course)
Business English S2
Poultry Husbandry S2 (Incubation and Brooding)
Poultry Husbandry S4 (Practice Work)
Physical Education S2 (Required of women students)

Electives

Physical Education S4 (Basketball and Hockey)

Second Year

First Semester

Agricultural Economics S1 (Farm Economic Problems)
Agricultural Engineering S3 (Farm Shop)
Fruit Growing S9 (General Course)
Poultry Husbandry S5 (Marketing and Disease Control)
Poultry Husbandry S7 (Breeding)
Veterinary Science S1 (Animal Sanitary Science)
Physical Education S5 (Required of men students not participating in football)

Electives

Physical Education S3 (For women)

Second Semester

Agricultural Economics S2 (Marketing)
Agricultural Engineering S2 (Farm Motors)
Agricultural Engineering S8 (Farm Structures)
Farm Management S2 (Farm Management and Accounts)
Poultry Husbandry S8 (Management and Specialties)
Rural Sociology S4 (Social and Economic Problems)

Electives

Physical Education S4 (For women)
Physical Education S4 (Basketball and Hockey)
Physical Education S6 (Baseball)
Public Speaking S-4

Poultry Husbandry S-1. (Judging and Housing) I.

This course embraces a study of the various economically important types and breeds of domestic fowl, judging for egg production capacity, and for exhibition quality. A visit to Storrs egg laying contest is required. This course also covers the principles and practices of constructing and equipping houses on a commerical poultry farm. A few trips to nearby poultry plants will be taken to study poultry house ventilation. Two hours for judging; two hours for housing.

2 class hours and 2 2-hour laboratory periods a week. Credit, 4.

Poultry Husbandry S-2. (Incubating and Brooding) II.

A study of incubation and brooding is made by means of the operation of standard incubators and brooders and through a consideration of basic principles. Students select and grade hatching eggs and operate small and mammoth incubators for a period of time. Under supervision each student has charge of a brood of chicks.

The incubation part of the course will consist of three class hours, one laboratory period and one practice period, and will run parallel to the brooding part which will consist of two class hours, one laboratory period and one practice hour.

5 class hours; 2 2-hour laboratory periods and the equivalent of 2 2-hour laboratory periods in incubation and brooding practice. (7 days a week.) Credit, 9.

Poultry Husbandry S-3. (Feeding) I.

A study of the common poultry feeds, feeding principles and successful commercial farm practices. Suitable rations for specific purposes are calculated.

2 class hours and 1 2-hour laboratory period a week. Credit. 3.

Poultry S-4. (Practice Work) II.

Practice work in candling, packing eggs, killing, pedigreeing, shipping chicks and other similar seasonal jobs is required. Skill in each task will have to be acquired for credit in this course.

The equivalent of 2 2-hour laboratory periods a week. Credit, 2.

Poultry Husbandry S-5. (Marketing and Disease Control) I.

This course covers candling and grading eggs, market classification of poultry and eggs, judging eggs, fattening, killing, picking, drawing and judging of live and dressed market poultry. This course also aims to acquaint the student with the normal hygienic conditions under which our domestic poultry thrive best. Sufficient anatomy and physiology will be given to enable the student to distinguish between normal and abnormal conditions. The nature of disinfectants and external and internal antiseptics will be stressed, and the students made acquainted with the best usages both scientific and practical in conducting a sanitary program for disease prevention and control. A special effort will be made to link the sanitary hygienic and disease control problems with the so-called down-to-date practices in feeding, housing and general management. Two hours for marketing; two hours for disease control.

2 class hours and 2 2-hour laboratory periods a week. Credit, 4.

Poultry Husbandry S-7. (Breeding) I.

This course includes the study of the improvement of poultry by means of mass selection, "seed-plot," flock improvement, and pedigree methods of breeding. Students follow through each step of a pedigree hatch and assist in the selection of the breeders used at the college plant. Basic principles of heredity necessary for an understanding of good breeding practices are studied. A visit to Genetics Laboratory at Storrs, Connecticut, is required.

3 class hours and 1 2-hour laboratory period a week. Credit, 4.

Poultry Husbandry S-8. (Management and Specialties) II.

In this course the following points are given special attention: lines upon which a well-organized poultry farm is developed, the general arrangement of plots and buildings, record keeping, accounting and advertising, and a study of surveys. A trip covering three or more days will be made to representative successful poultry farms. The expense per student is approximately $15–$20. This is required of each student taking the course for credit. One hour's credit will be devoted to the specialites, such as turkeys, ducks, etc.

3 class hours and the equivalent of 1 2-hour laboratory period a week. Credit, 4.

Poultry Husbandry S-10. (General Poultry Husbandry) II.

Poultry keeping as a national industry; its importance and geographical distribution; opportunities and possibilities in poultry culture in Massachusetts; principles of feeding; utility classification of fowl; incubation; the production of hatching eggs; the baby chick industry; and brooding and rearing. Practical exercises will be closely correlated with the study of breeds and varieties, various types of incubators, brooders, brooder-houses, etc. "Practical Poultry Management" by Rice and Botsford will be used as a text.

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Note. — Students who take course 10 must get permission from the Poultry Department to take advanced poultry courses.

Note. — Every student in this course must qualify in tractor practice, milking, harnessing, and teaming, single and double. Arrangements for practice periods and examinations by special assignment. No student will be put in placement training who has not satisfied these preliminary requirements.

FLORICULTURE

Students who complete the course in Floriculture are fitted primarily for work in commercial and private estate greenhouse establishments and retail flower stores. After gaining experience such students may be able to start in business for themselves. With the courses in General Horticulture they should also be qualified for positions on private estates, in parks, or in nurseries.

The offices and class rooms of the Department of Floriculture are located in French Hall. Of the two lecture rooms, one will accommodate 40 students, the other 90 students; a laboratory, equipped with slate-covered tables, will accommodate 40 students. In the basement of the building the department has a specially prepared room for bulb storage, a fertilizer and tool room, and a large room for general storage purposes.

The glass area of the department consists of approximately 20,000 square feet, divided as follows: French Hall, range of 7,200 square feet, a durable, practical commercial range, composed of palm and fern, sweet pea, carnation, rose and students' houses; the old Durfee range of 7,400 square feet, devoted to the growing of decorative, conservatory and bedding plants, and chrysanthemums; one house of 3,200 square feet suitable for propagating work and general plant culture; and approximately 2,200 square feet in cold frames and hotbeds.

In addition the department has land for summer culture of carnations, gladioli, dahlias, annuals and bedding plants, a perennial garden, an iris garden, and a rose garden.

Floriculture

First Year

First Semester

Business Law S1
Floriculture S1 (Garden Materials)
Floriculture S3 (Greenhouse Construction and Heating)
Horticulture S1 (Plant Materials)
Soils and Crops S1 (Soil Management)
Vegetable Gardening S1 (Principles of Vegetable Culture)
Agricultural Opportunities S1 (Required of women students)
Hygiene S-1 (Required of women students)
*Physical Education S1
Student Health S3 (Hygiene — required of men students)
Power lawn mower practice
Tractor Practice
Teaming and Harnessing

Electives

Home Economics S-1 (Food Selection)
*Physical Education S1 is required of men students not participating in football, also required of women students.

Second Semester

(Eight Weeks Resident Instruction Followed by Six Months Placement Training)
Business English S2
Entomology S2 (Insects of Ornamental Trees and Shrubs)
Floriculture S2 (Greenhouse Management and Propagation)
Forestry S2 (The Elements of Forestry)
Horticulture S2 (Plant Propagation)
Soils and Crops S2 (Fertilizers)
Vegetable Gardening S2 (Principles of Vegetable Culture)
Physical Education S2 (Required of women students)

Electives

Physical Education S4 (Basketball and Hockey)

Second Year

First Semester

Agricultural Engineering S3 (Farm Shop)
Business Management S1 (Fundamentals of Business Management)
Floriculture S5 (Commerical Production)
Floriculture S7 (Flower Arrangement)
Fruit Growing S9 (General Course)
Horticulture S-7 (Care of Plant Materials)
Physical Education S5 (Required of men students not participating in football)

Electives

Physical Education S3 (For women)

Second Semester

Floriculture S6 (Commercial Production)
Floriculture S8 (The Uses of Herbaceous Plants)
Floriculture S10 (Conservatory Plants)
Horticulture S6 (Plant Materials)
Vegetable Gardening S4 (Vegetable Forcing)

Electives

Physical Education S4 (For women)
Physical Education S4 (Basketball and Hockey)
Physical Education S6 (Baseball)
Public Speaking S-4

Floriculture S-1. (Garden Materials) I.

This course is intended for students who will take up private estate work or who will specialize in floriculture. It will include a study of the annuals,

biennials, herbaceous perennials, and bedding plants which are commonly used in commercial floriculture and in private estate work. Methods of propagation, culture and uses will be considered. Laboratory exercises will include work in propagation, planting, study of materials, and planning of beds and borders.

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Floriculture S-2. (Greenhouse Management and Propagation) II.

A study of the principles of greenhouse management including the consideration of soils, fertilizers, watering, ventilation, temperature regulation, insect and disease control. The methods of propagation of florists' crops will be taken up in detail.

3 class hours and 1 2-hour laboratory period a week. Credit, 4.

Floriculture S-3. (Greenhouse Construction and Heating) I.

This course will take up the origin, growth, and importance of the floriculture industry, development of the greenhouse, types of houses and construction, and methods of greenhouse heating. Trips may be taken to visit greenhouse establishments in the vicinity of Amherst.

1 class hour and 1 2-hour laboratory period a week. Credit, 2.

Floriculture S-5. (Commercial Production) I.

Courses S-5 and S-6 will be devoted to a consideration of the important commercial crops. Special attention will be given to the culture (under glass) of roses, carnations, chrysanthemums, violets, and sweet peas. Other cutflower crops and various potted plants will also be considered. All members of the class are required to take a one-day trip to visit a large commercial greenhouse establishment at an approximate cost of five dollars each. Textbooks required during the two courses will be: Holmes, "Commercial Rose Culture"; and Smith, "Chrysanthemum Manual."

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Floriculture S-6. (Commercial Production) II.

A continuation of Floriculture S-5.

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Floriculture S-7. (Flower Arrangement) I.

A study of the principles underlying the use of flowers in funeral designs and sprays, table decorations, corsages, vase, bowl and basket arrangements; decorations for public functions; study of color with regard to such work. Limited to students who are majoring in floriculture. Textbooks: White, "Principles of Flower Arrangement"; Harry, "Manual of Floral Designing."

1 class hour and 2 2-hour laboratory periods a week. Credit, 3.

Floriculture S-8. (The Uses of Herbaceous Plants) II.

This course is a continuation of Floriculture S-1 and is intended for students specializing in floriculture and general horticulture. It provides opportunity for a more detailed study of many of the plants considered in the preceding course with special emphasis on their uses in gardens and in other types of landscape planting. Lectures, assigned readings, study and identification of plants, planning of borders and gardens. All members of the class are required to take a one-day trip to visit nurseries and perennial gardens at an approximate cost of five dollars each.

2 class hours and 1 4-hour laboratory period a week. Credit, 4.

At Work in the College Nursery

Practice in Pest Control in College Orchards

Floriculture S-10. (Conservatory Plants) II.

A study of the plants, both foliage and flowering, which are used in conservatories and in decorative work. Methods of propagation, culture, uses and identification of plants will be included in the course. Trips may be taken to visit the conservatories at Smith and Mount Holyoke colleges.

1 class hour and 1 2-hour laboratory period a week. Credit, 2.

Note: — Every student must qualify in tractor practice; and in harnessing and teaming, single and double. Arrangements for practice periods and examinations by special assignment. No student will be put on placement training who has not satisfied these preliminary requirements.

Practice in operating power lawn mower equipment will be required of all men students.

FRUIT GROWING

This course is arranged to give the student a sound practical knowledge of fruit growing and allied subjects. Graduates who are capable and experienced have advanced rapidly to positions of responsibility in some of the larger orchards of New England, and the demand is active for good men in that field.

Some graduates of this course have gone into business for themselves, establishing successful orchards of their own, or pruning, spraying and otherwise caring for a number of small orchards, the owners of which are not prepared to do their own work. Still others are packing house foremen or are engaged in some other marketing activity. The fruit-growing industry of New England is an important one and there are opportunities for good men who are well trained.

Practical work in the orchards under expert supervision is emphasized where possible. It is intended to familiarize students with the best methods that have been devised by experiment stations and leading fruit growers for the production and marketing of high-quality fruits under New England conditions. The Department of Pomology has about fifty acres of fruits easily accessible from the classroom, and the orchards are used freely for purposes of instruction. All the common tree fruits and small fruits are grown here on a commercial scale. Many experiments and demonstrations are in progress in the plantations, offering an exceptional opportunity to the student.

The Department also has a thoroughly up-to-date storage and packing house, in which are several types of refrigerated and common storage rooms, fruit sizing machines, and other modern equipment.

A good equipment is maintained of the principal types of orchard tools and machines, including sprayers, plows, harrows, cultivators, tractor, pruning saws, shears, etc., for study and trial by students.

Fruit Growing

First Year

First Semester

Business Law S1
Floriculture S1 (Garden Materials)
Fruit Growing S1 (Growing Tree Fruits)
Fruit Growing S3 (Varieties)
Soils and Crops S1 (Soil Management)
Vegetable Gardening S1 (Principles of Vegetable Culture)
Agricultural Opportunities S1 (Required of women students)
Hygiene S-1 (Required of women students)
*Physical Education S1
Student Health S3 (Hygiene — required of men students)
Tractor Practice
Teaming and Harnessing

Electives

Home Economics S-1 (Food Selection)
*Physical Education S1 is required of men students not participating in football; also required of women students.

Second Semester

(Eight Weeks Resident Instruction Followed by Six Months Placement Training)
Agricultural Engineering S2 (Farm Motors)
Agricultural Engineering S10 (Repair of Farm Equipment)
Business English S2
Fruit Growing S2 (Orchard and Vineyard Pruning)
Rural Sociology S2 (Social and Economic Problems)
Soils and Crops S2 (Fertilizers)
Physical Education S2 (Required of women students)

Electives

Physical Education S4. (Basketball and Hockey)

Second Year

First Semester

Agricultural Economics S1 (Farm Economic Problems)
Agricultural Engineering S9 (Drainage and Farm Structures)
Beekeeping S1 (Fall Management, Wintering and Honey Marketing)
Forestry S3 (Estate Forestry and Woodland Management)
Fruit Growing S5 (Harvesting, Packing, Storage and Marketing)
Fruit Growing S7 (Small Fruits)
Horticultural Manufactures S1
Physical Education S5 (Required of men students not participating in football)

Electives

Physical Education S3 (For women)

Second Semester

Agricultural Economics S2 (Marketing)
Beekeeping S2 (Spring Management, Pollination and Honey Production)
Farm Management S2 (Farm Management and Accounts)
Fruit Growing S4 (Fruit Pests and Spraying)
Fruit Growing S6 (Problems in Orchard Management)
Horticultural Manufactures S2
OR
Poultry S10 (General Course)
Vegetable Gardening S8 (Commercial Vegetable Culture)

Electives

Physical Education S4 (For women)
Physical Education S4 (Basketball and Hockey)
Physical Education S6 (Baseball)
Public Speaking S-4

Fruit Growing S-1. (Growing Tree Fruits) I.

This course covers the field of orchard planting and development, and the management of bearing plantations to produce fruit of high quality. Sites and soils for plantations of apples,' pears, peaches, plums, and cherries are discussed along with the best methods of setting trees to insure a good start. The handling of young trees to bring them into early profitable bearing is given special attention.

The culture of bearing orchards is studied in detail to give an understanding of the factors that influence yield and quality of fruit. Methods of soil management are discussed with reference to their advantages and limitations. The experimental plots afford exceptional opportunities to study cultural methods and many subjects are discussed in the orchards.

3 class hours a week. Credit, 3.

Fruit Growing S-2. (Orchard and Vineyard Pruning) II.

Fruit plantations may be damaged more by unintelligent pruning than by mismanagement in any other single operation. If the orchardist does not know that apple trees bear on spurs, he is likely to cut them off in pruning, and so reduce his chances for a crop. If he is ignorant of the fact that the peach bears on last year's wood, he may remove most of this wood, and incidentally most of his crop. This course aims to give the student a thorough training in the theory of pruning and the methods of bearing of the different fruits. Instruction in grafting also is included.

At the same time, every student is required to prune in the college orchards and vineyards until he becomes reasonably proficient with each kind of fruit.

1 class hour and 2 2-hour laboratory periods a week. Credit, 3.

Fruit Growing S-3. (Varieties) I.

It is the aim of this course to acquaint the student with the more important varieties of common tree and small fruits, and their value in the commercial planting. The selection of fruit for exhibition and the judging of fru ts will also be considered.

2 2-hour laboratory periods a week. Credit, 2.

Fruit Growing S-4. (Fruit Pests and Spraying) II.

This course deals with the development of insect and disease pests, and particular attention is given to the vulnerable points in their life cycles at which control measures are directed. It also considers the principal spray materials and each student is given practice in their preparation and application.

The department is well equipped with modern spraying apparatus, from bucket pumps to large power outfits, and students are required to study the construction of these pumps and to operate them in the orchards.

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Fruit Growing S-5. (Harvesting, Packing, Storage, and Marketing) I.

Handling the crop from tree to consumer is the field covered by this course. Methods of harvesting and appliances used are studied in the orchards. Practice in packing the most popular containers forms a prominent part of the laboratory work.

The principles of common and refrigerated storage are considered in detail and storage house construction is discussed, with a critical examination of several storages in use on or near the campus. Marketing methods are given special consideration as they relate both to distant and to local markets.

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Fruit Growing S-6. (Problems in Orchard Management) II.

This course provides an opportunity to focus placement training experiences and information acquired in previous courses on the major problems of the New England fruit grower. It is the aim of the course to familiarize the student with conditions under which fruit must be grown here, with current thought on the more important recent developments, and with the adjustments which are being made in the fruit industry of the Northeastern States.

Each student must be prepared to take one or more trips to some of the prominent fruit sections of the Northeast. This will involve some expense.

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Fruit Growing S-7. (Small Fruits) I.

While orcharding will always be the leading phase of fruit growing in Massachusetts, there are many unusual opportunities for success in growing the various small fruits. This course deals with problems of establishing and handling successfully, plantations of strawberries, raspberries, blackberries, blueberries, currants, and grapes.

The college has plantations of these fruits, so the student has ample opportunity for a wide range of practical work. The aim is to make the course of the utmost practical value, as well as to give the scientific principles on which practices are based.

2 class hours a week. Credit, 2.

Fruit Growing S-9. (General Course) I.

This course is intended to meet the needs of students in other majors who cannot devote more than one semester to the subject of Fruit Growing. It deals with the practical side of growing and marketing fruits. Special attention is given to such questions as selection of sites, choice of varieties, grafting, spraying, pruning, soil management, harvesting, packing and marketing. (Floriculture, Horticulture, and Poultry Majors).

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Fruit Growing S-10. (General Course) II.

This course is a repetition of Fruit Growing S-9 primarily for the benefit of first year students who are specializing in Animal Husbandry.

4 class hours and 1 2-hour laboratory period a week. Credit, 5.

Note. — Every student in this course must qualify in tractor practice, milking, harnessing, and teaming, single and double. Arrangements for practice periods and examinations by special assignment. No student will be put in placement training who has not satisfied these preliminary requirements.

GENERAL HORTICULTURE

The constantly increasing interest in development of grounds, both public and private, for use and enjoyment, has created a demand for men trained to handle the varied problems in the construction and maintenance of these grounds. The course in General Horticulture aims to make the student familiar with these various problems.

Men who have taken this course are to be found in such different fields as foremen in nurseries, or proprietors of nurseries which they themselves have built up; superintendents on private estates, cemeteries, parks, and various public and private institution grounds; foremen for landscape construction firms, and some have developed their own business in landscape construction and grounds maintenance service.

With the whole campus as a laboratory, the student finds problems about him every day comparable to those he will meet when he goes out to work. The broad lawns, the walks and drives, the gardens, the greenhouses, the orchards, the vegetable plots, as well as the farms, supply all the various phases of work which will be encountered on estates, in parks, or in institution grounds. As far as practicable the student is given the opportunity to determine what these problems are and to solve them himself under expert supervision.

On the campus is to be found a large and excellent collection of mature trees, shrubs, and vines. From these plants the student is able to build up a background of plant knowledge; in identification; in propagation which is carried on in a special greenhouse for the purpose; in the handling of plants in various stages of their growth, in the nursery and on the campus; and in their ultimate care, pruning and protection against injuries of all kinds. Construction of roads, walks, drainage and other problems involving the moving of earth are especially valuable to those looking forward to landscape construction.

The courses in forestry are designed to give practical instruction in the elements of forest care and management with special reference to the problems that will be faced by one who is given the responsibility of managing farm or estate woodland. The necessary phases of forest measurement, silviculture and forest protection are included. Field work, carried out on the college forest of 755 acres at Mt. Toby, takes the form of demonstrations and practical field problems in forest care and management. Students in these courses work to a considerable extent under actual field conditions.

Horticulture

First Year

First Semester

Business Law S1
Floriculture S1 (Garden Materials)
Horticulture S1 (Plant Materials)
Soils and Crops S1 (Soil Management)
Soils and Crops S5 (Construction and Maintenance of Fine Turf Areas)
Vegetable Gardening S1 (Principles of Vegetable Culture)
Agricultural Opportunities S1 (Required of women students)
Hygiene S-1 (Required of women students)
*Physical Education S1
Student Health S3 (Hygiene — required of men students)
Power Lawn Mower Practice
Tractor Practice
Teaming and Harnessing

Electives

Home Economics S1 (Food Selection)
*Physical Education S1 is required of men students not participating in football; also required of women students.

Second Semester

(Eight Weeks Resident Instruction Followed by Six Months Placement Training)
Botany S2 (Diseases of Trees and Shrubs)
Entomology S2 (Insects of Ornamental Trees and Shrubs)
Forestry S2 (The Elements of Forestry)
Horticulture S2 (Plant Propagation)
Rural Sociology S2 (Social and Economic Problems)
Soils and Crops S2 (Fertilizers)
Vegetable Gardening S2 (Principles of Vegetable Culture)
Physical Education S2 (Required of women students)

Electives

Physical Education S4 (Basketball and Hockey)

Second Year

First Semester

Agricultural Engineering S3 (Farm Shop)
Business English S1
Forestry S3 (Forest Measurement and Management)
Fruit Growing S9 (General Course)
Horticulture S3 (Surveying and Mapping)
Horticulture S7 (Care of Plant Materials)
Physical Education S5 (Required of men students not participating in football)

Electives

Physical Education S3 (For women)

Second Semester

Agricultural Engineering S2 (Farm Motors)
Floriculture S8 (The Uses of Herbaceous Plants)
Forestry S4 (The Care and Cultivation of the Forest)
Horticulture S4 (Landscape Construction Problems)
Horticulture S6 (Plant Materials)

Electives

Physical Education S4 (For women)
Physical Education S4 (Basketball and Hockey)
Physical Education S6 (Baseball)
Public Speaking S-4

Horticulture S-1. (Plant Materials) I.

Study of evergreen and deciduous trees used in landscape work, their distinguishing characters, and culture, with special reference to nursery and planting practice.

1 class hour and 2 2-hour laboratory periods a week. Credit, 3.

Horticulture S-2. (Plant Propagation) II.

This course will present the principles of plant propagation with special reference to their application to plant materials in nursery and greenhouse practice. The lectures are concerned with careful explanations of seedage, cuttage, graftage, layerage and division. In the laboratory the student propagates plants by each of these methods.

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Horticulture S-3. (Surveying and Mapping) I.

Practice in the use of simple surveying instruments as tapes, compasses and levels used in the measurement of land surfaces, and the application of these instruments in landscape construction.

1 class hour and 2 2-hour laboratory periods a week. Credit, 3.

Horticulture S-4. (Landscape Construction Problems) II.

Continuation of Horticulture S-3, including the reading of landscape plans, figuring construction cost on grading work and garden construction problems, and setting stakes for landscape development from working drawings.

1 class hour and 2 2-hour laboratory periods a week. Credit, 3.

Horticulture S-6. (Plant Materials) II.

Study of shrubs, both evergreen and deciduous, and woody vines, to enable the student to recognize the plants used in ornamental plantings and to familiarize him with the handling of these plants both in nursery practice and landscape work.

1 class hour and 2 2-hour laboratory periods a week. Credit, 3.

Horticulture S-7. (Care of Plant Materials) I.

This course deals with the care of woody ornamental plants under the following heads: planting, pruning, maintenance of soil fertility, winter protection and pest control.

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Excursion. — For Horticulture S-6, a two-day field trip will be required. Estimated cost, $10.00.

Note. — Every student must qualify in tractor practice, power lawn mower operation, and in harnessing and teaming, single and double. Arrangements for practice periods and examinations by special assignment. No student will be put on placement training who has not satisfied these preliminary requirements.

VEGETABLE GARDENING

Students who complete the course in Vegetable Gardening are fitted to go into commercial work as greenhouse vegetable growers, market gardeners, truck farmers and seed growers. Responsible positions are also open as gardeners on private estates, state and private institutions, as assistants with seed concerns and with retail and wholesale marketing companies.

The vegetable industry is an important vocation in New England and the opportunities are excellent in the various phases of the business for good men or women who are well trained. The Department of Vegetable Gardening is well equipped to give thorough training in that ample class and laboratory rooms are available plus 3,500 square feet of modern greenhouse space and approximately 500 linear feet of hot and cold frames. More than 10 acres of land is also utilized in the production of vegetable crops on a commercial and demonstrational basis including a variety trial plot in which more than 1,000 varieties are grown annually. Equipment of the most modern type is maintained for study and use. The office, class and laboratory rooms are located in French Hall.

Vegetable Gardening

First Year

First Semester

Floriculture S1 (Garden Materials)
Floriculture S3 (Greenhouse Construction and Heating)
Fruit Growing S1 (Growing Tree Fruits)
Soils and Crops S1 (Soil Management)
Vegetable Gardening S1 (Principles of Vegetable Culture)
Agricultural Opportunities S1 (Required of women students)
Hygiene S-1 (Required of women students)
*Physical Education S1
Student Health S3 (Hygiene — required of men students)
Tractor Practice
Teaming and Harnessing

Electives

Home Economics S-1 (Food Selection)

*Physical Education S1 is required of men students not participating in football: also required of women students.

Second Semester

(Eight Weeks Resident Instruction Followed by Six Months Placement Training)
Floriculture S2 (Greenhouse Management and Propagation)
Fruit Growing S2 (Orchard and Vineyard Pruning)
Soils and Crops S2 (Fertilizers)
Vegetable Gardening S2 (Principles of Vegetable Culture)
Vegetable Gardening S6 (Diseases, Insects and Their Control)
Physical Education S2 (Required of women students)

Electives

Physical Education S4 (Basketball and Hockey)

Second Year

First Semester

Agricultural Engineering S9 (Drainage and Farm Structures)
Beekeeping S1 (Fall Management, Wintering, and Honey Marketing)
Fruit Growing S7 (Small Fruits)
Horticultural Manufactures S1
Vegetable Gardening S3 (Systematic Vegetable Gardening)
Vegetable Gardening S-5 (Market Practices)
Physical Education S5 (Required of men students not participating in football)

Electives

Physical Education S3 (For women)

Second Semester

Beekeeping S2 (Spring Management, Pollination, and Honey Production)
Farm Management S2 (Farm Management and Accounts)
Fruit Growing S4 (Fruit Pests and Spraying)
Horticultural Manufactures S2
OR
Poultry S-10 (General Course)
Vegetable Gardening S4 (Vegetable Forcing)
Vegetable Gardening S8 (Commercial Vegetable Culture)

Electives

Agricultural Engineering S-10 (Repair of Farm Equipment)
Physical Education S4 (For women)
Physical Education S4 (Basketball and Hockey)
Physical Education S6 (Baseball)
Public Speaking S-4

Vegetable Gardening S-1. (Principles of Vegetable Culture) I.

Lecture periods are devoted to discussions covering certain fundamental principles of plant structure and growth as they influence and regulate commercial vegetable culture. The work in the laboratory includes detailed studies in seedage, plant growing, manures and fertilizers, garden planting, pests, storage and marketing.

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Vegetable Gardening S-2. (Principles of Vegetable Culture) II.

Lectures are devoted to discussion of the more important factors of soil and climate which regulate plant growth and reproduction. The laboratory studies are planned in such a manner that the factors discussed in lecture are definitely applied to specific vegetable or horticultural crop plants.

3 class hours and 1 2-hour laboratory period a week. Credit, 4.

Vegetable Gardening S-3. (Systematic Vegetable Gardening) I.

This course is designed to acquaint the student with the identification, nomenclature and classification of the standard types and varieties of vegetables; judging and exhibiting; seed production and variety improvement work.

1 class hour and 2 2-hour laboratory periods a week. Credit, 3.

Vegetable Gardening S-4. (Vegetable Forcing) II.

A study of (1) the geographical distribution of the greenhouse industry and the part this phase of vegetable production plays in supplying our markets with fresh vegetables, (2) the principles of culture, harvesting and marketing of those vegetables commonly grown as commercial crops under glass, (3) growing early plants in frames and plant houses for home and retail purposes.

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Vegetable Gardening S-5. (Marketing Practices) I.

A study of the various factors concerned with the harvesting and marketing of vegetable produce, including grades, packs, packages, brands, and inspection requirements. The Department of Agricultural Economics will present material covering transportation, markets and marketing principles.

3 class hours a week. Credit, 3.

Vegetable Gardening S-6. (Diseases, Insects and Their Control) II.

This course is intended to give those students majoring in vegetable gardening an understanding of the more common insects and diseases which attack vegetable plants and the most satisfactory methods for controlling these pests.

2 class hours and 2 2-hour laboratory periods a week. Credit, 4

Vegetable Gardening S-8. (Commercial Vegetable Culture) II.

Commercial problems and practices are studied in detail including seedage, planting, tools and machinery, nutrition, harvesting, marketing and management. Organized trips to market gardening sections are required covering a period of approximately three days and costing the individual student about fifteen dollars.

2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Note. — Every student in this course must qualify in tractor practice, milking, harnessing, and teaming, single and double. Arrangements for practice periods and examinations by special assignment. No student will be put in placement training who has not satisfied these preliminary requirements.

WILDLIFE MANAGEMENT

Increased interest in the recreational use of our land areas opens a broad field in the Management of Wildlife. The dovetailing of a game crop into farming and forestry creates a need for the services of the vocationally trained man with the right enthusiasm for wildlife and its conservation.

Men who take this course are required to pursue studies in agriculture, forestry, zoology, and allied subjects. Familiarity with forest and stream, the agriculture of the region, and the intermingling wildlife is gained by practical field work on Mt. Toby Forest, a demonstrational and research area of 755 acres owned by the College, and on surrounding areas.

Although the course of study offered is primarily vocational, students must develop a technical mind. A natural bent for scientific investigation is quite as important as enthusiasm. In vocational work of this nature covering such a broad field and utilizing so many economic forces, one must be trained not only to observe but to reason as well. The work is interesting to those qualified to pursue it, but calls for students who are mentally alert and capable of maintaining a high standard of work. Only this type of man is desired and will be accepted.

Men who take this course should aim to qualify themselves for positions as game wardens, estate and club managers, or as field men engaged in various phases of wildlife work in state parks and national forests. There are a number of fields such as game farming, fur farming, etc., open to the private operator. The economic development of wildlife is essential in the multiple use of our land areas whether privately or publicly owned.

This course will be limited at present to ten students. Because of limited size of class, all entrance applications will be carefully examined by a special faculty committee and, in case of any question on information supplied, applicants may be requested to report in person for interview.

Wildlife Management

First Year

First Semester

Agriculture S1 (Soil Management)
Breeding and Propagation S5
Forestry S5 (Animal Identification)
Forestry S7 (Analysis of Forest Areas)
Forestry S9 (Wildlife Food Plants)
*Physical Education S1
Student Health S3 (Hygiene — required of men students)
Tractor Practice

Second Semester

Breeding and Propagation S6
Business English S2
Ecology S2
Forestry S6 (Field Practice)
Forestry S8 (Forest Measurement and Mapping)

Electives

*Physical Education is required of men students not participating in football.

Electives

Physical Education S4 (Basketball and Hockey)

Second Year

First Semester

Agricultural Engineering S3 (Farm Shop)
Forestry S27 (Silviculture)
Forestry S29 (Field Problems)
General Biology S21
Law and Administrative Principles S25
Physical Education S5 (Required of men students not participating in football)

Second Semester

Agricultural Engineering S2 (Farm Motors)
Diseases and Predators S26
Fish Culture S24
Forestry S28 (Forest Use and Management)
Forestry S30 (Special Problems)

Electives

Physical Education S4 (Basketball and Hockey)
Physical Education S6 (Baseball)
Public Speaking S4

Agriculture S-1. (Soil Management) I.

A course in the relation of the soil to natural cover and to the production of cultivated plants. Soil management as regards moisture control, tillage, organic matter and acidity will be studied.

The laboratory work will include training in the use and interpretation of the maps of the U. S. Soil Survey, and in testing soil for texture, organic matter and acidity.

Students will be required to make a study of some suitable area, and report on the soil conditions as related to wildlife management.

2 class hours and 1 3-hour laboratory period a week. Credit, 3.

Breeding and Propagation S-5. I.

Anatomical and physiological relationships, age, sex and vigor determinations in birds; breeding principles and practices, housing and shelter principles and practices, feeding principles and practices, management of mature stock.

3 class hours and 1 2-hour laboratory period a week. Credit, 4.

Breeding and Propagation S-6. II.

A study of the basic principles of successful incubation, brooding and rearing. Students will select hatching eggs, regulate and operate small and mammoth incubators, regulate and operate various types of brooders with chicks.

2 class hours and 2 2-hour laboratory periods a week. Credit, 4.

Diseases and Predators S-26. II.

In order to conserve animal life a knowledge of the causes and the nature of death is necessary. The general scope of this course includes health disturbances and mortality in game animals due to disease producing agents and predators; also, the mechanism of the disease process and mode of death, along with corrective measures which will conserve animal health and life.

3 class hours a week. Credit, 3.

Ecology S-2. II.

Stresses the importance of physical factors, temperature, humidity, light, air currents, etc., to living things. Includes methods of measuring and evaluating these factors where game is concerned. (Elementary physical geography, meteorology.)

2 class hours and 1 4-hour laboratory period a week. Credit, 4.

Fish Culture S-24. II.

A course designed to set forth the principles of fish culture for both stream and pond species. Methods of propagation, equipment and its use, water requirements, nutritional requirements and feeding methods, and distribution problems will be considered.

2 class hours and 1 4-hour laboratory period a week. Credit, 4.

Forestry S-5. (Animal Identification) I.

Identification of the principal species of the fauna of North America including the use of keys and a study of the life history including breeding habits and food and cover requirements. Includes the reading of signs indicating animal abundance under natural conditions.

2 class hours and 2 2-hour laboratory periods a week. Credit, 4.

Forestry S-6. (Field Practice) II.

A discussion of the various field procedures for the determination of values of lakes, streams and forests for wildlife production. Field work includes surveys of areas for food and cover and the writing of reports based on field inspection for the management of wild land.

2 class hours and 1 4-hour laboratory period a week. Credit, 4.

Forestry S-7. (Analysis of Forest Areas) I.

This course is designed to prepare the student to properly analyze a forest stand. Lecture periods are devoted to a study of site factors and their relation to forest types. Field work consists of the determination of boundaries, areas, types, and tree volumes by species.

2 class hours and 1 4-hour laboratory period a week. Credit, 4.

Forestry S-8. (Forest Measurement and Mapping) II.
Application of the several methods of forest measurement. Students must become proficient in the calculation of yields of forest products. The student is required to map an assigned area showing physiographic features, silvicultural data, and timber factors.
2 class hours and 1 4-hour laboratory period a week. Credit, 4.

Forestry S-9. (Wildlife Food Plants) I.
Knowledge of forest plants that produce food materials valuable in maintaining game birds and mammals is essential to every student of Wildlife Management.
This course is designed to familiarize the student with such vegetation, both native and introduced species. Stress is laid upon systematic identification of the material and upon game food values.
2 2-hour laboratory periods a week. Credit, 2.

Forestry S-27. (Silviculture) I.
Silvicultural systems used to secure natural forest reproduction and intermediate cuttings for cultural improvement as applicable in the Northeast. Field practice in the marking of trees for removal in the above cuttings. Forest protection. Artificial reproduction of food and shelter species.
One Saturday field trip involving a cost of about $1.50 per student is required.
2 class hours and 1 4-hour laboratory period a week. Credit, 4.

Forestry S-28. (Forest Use and Management) II.
Building and maintenance of forest improvements. Forest working plans and regulations. Surveys and reports of forest areas covering forest valuation. Methods of harvesting, silvicultural application and financial returns.
One Saturday field trip costing about $1.50 per student is required.
2 class hours and 1 4-hour laboratory period a week. Credit, 4.

Forestry S-29. (Field Problems) I.
Problems provide the opportunity to develop a project in a field of work of interest to the student. These problems will involve field and laboratory work and will require a critical examination of the literature on the subject chosen. Problems may be chosen from a list of subjects provided, including those pertaining to the life history or management of fish, upland game, fur bearers, or non-game animals.
Conference, field and library work. Credit, 3.

Forestry S-30. (Special Problems) II.
A continuation of Forestry S-29. The second semester will be used to summarize the field data and to complete the report.
Conference, field and library work. Credit, 3.

General Biology S-21. I.
A course designed to bring together the threads of biological knowledge previously acquired. Deals with the principles of animal organization, physiology, development, and adaptation. Disease-producing organisms and other harmful animals are stressed, and a review of the types of the principal phyla is included.
2 class hours and 2 2-hour laboratory periods a week. Credit, 4.

Law and Administrative Principles S-25. I.
This course will consist of a series of lectures on the following subjects:
Contracts and land laws including explanations of abstracts and deeds.
5 lectures Mr. Smart.
Principles of accounting including the relationships of costs, overhead and profits. 5 lectures Professor Barrett.
State and Federal Laws relating to conservation.
5 lectures. State Conservation Department.
Lectures scheduled by arrangement. Credit, 1.

RELATED SUBJECTS IN OTHER DEPARTMENTS

Instruction in agricultural economics is given with a view toward presenting the business side, or economics of agriculture. The required course is divided into two parts given in separate semesters. The approximate division of subject matter for each semester is indicated below.

Agricultural Economics S-1. (Farm Economic Problems) I.

The purpose of this course is to introduce students to the more important economic problems facing New England farmers. Increasing competition with other farm sections, long-time movements of farm prices and farm profits, farm credit, farm taxation, tariffs and other farm relief measures are some of the problems to be considered.

(See requirement for marketing trip below.)

2 class hours a week. Credit, 2.

Agricultural Economics S-2. (Marketing) II.

This course deals largely with economic problems arising out of marketing farm products. Particular attention is given to marketing methods used in New England and to the comparison of local methods with methods used by farmers in competing sections. Principles and methods of co-operative marketing used by successful co-operative associations are studied in detail in order to show how New England farmers may meet competition from associations in other sections, either as individual producers or as officers or members of local associations.

A two-day marketing trip to Boston or New York is required of all students in order to study at first hand the methods of handling products on the wholesale markets. This trip may be required in either semester.

2 class hours a week. Credit, 2.

Agricultural Engineering S-1 and S-2. (Farm Motors) I. II.

This course is a study of the principles of the gasoline engine and its accessories, as used in trucks, automobiles, tractors, and stationary work. Instruction is given in the laboratory by lectures, demonstrations, and exercises. Shop experience is given by overhauling machines brought in for repair. This course also deals with the application of electricity to agriculture including electric wiring.

3 2-hour laboratory periods a week. Credit, 3.

Agricultural Engineering S-3 and S-4. (Farm Shop) I. II.

This course gives instruction in the care and use of carpenters' tools through bench work, repair of farm equipment, and building construction. Practice in building forms, mixing and placing concrete, framing, cutting rafters, etc., make up this portion of the subject. Instruction in forging, pipe fitting, soldering, and the use of machinists' tools for the repair of farm machinery and miscellaneous farm equipment, together with a study of pumps and water supply systems make up the other portion of the work.

3 2-hour laboratory periods a week. Credit, 3.

Agricultural Engineering S-5. (Farm Engineering) I.

The principles underlying the practice of farm drainage are discussed. Instruction is given in the use of the engineer's level for the purpose of laying out and grading tile drainage ditches. In addition, practice is given in forging, pipe fitting, soldering, and use of machinists' tools which will help in the repair of farm machines and miscellaneous farm equipment. Part of the course is given over to the study of field implements and power-driven machines. A study of various types of pumps and water supply systems is also included.

1 class hour and 2 2-hour laboratory periods a week. Credit, 3.

Agricultural Engineering S-6. (Dairy Mechanics) II.
This course is planned for men who are fitting themselves to take charge of dairy plants or allied lines of work. It includes a study of steam boilers, pumps, steam traps, water filters and softeners, belting, electric motors, milking machines, and refrigeration plants.
2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Agricultural Engineering S-7 and S-8. (Farm Structures) I. II.
A study of the building materials commonly used in farm construction; details of construction and simple structural mechanics; the principles of design of such farm buildings as the dairy stable, hog house, horse barn, general purpose barn, poultry house, fruit and vegetable storage buildings is made. Each student will have opportunity to design in detail one of the major farm buildings in which he is particularly interested.
1 class hour and 2 2-hour laboratory periods a week. Credit, 3.

Agricultural Engineering S-9. (Drainage and Farm Structures) I.
This course is for Vegetable Gardening and Fruit Growing majors and will involve the study of underlying principles of drainage. Practice will be given in the use of the engineer's level for the purpose of laying out and grading tile drainage ditches. In the study of Farm Structures the materials, details of construction, simple structural mechanics, and principles of design of types of buildings suitable to the vegetable gardener will be made. Each student will design in detail one of the major buildings in his field.
1 class hour and 2 2-hour laboratory periods a week. Credit, 3.

Agricultural Engineering S-10. (Repair of Farm Equipment) II.
Instruction is given in forging, pipe fitting, soldering, and the use of machinists' tools for the repair of farm machinery and miscellaneous farm equipment, together with a study of pumps and water systems. (Fruit Growing majors.)
3 2-hour laboratory periods a week. Credit, 3.

Agricultural Opportunities for Women S-1. I.
A study of problems of vocational adjustments and of opportunities for women in agriculture and related fields.
1 class hour a week. Credit, 1.

Bacteriology S-1. (Bacteriology and Rural Hygiene) I.
The reproduction, structure, growth, changes produced by the action of bacteria upon various substances and the methods by which disease producing bacteria of man and animals are disseminated will be studied. The proper use of disinfectants, vaccines and serums in the control and treatment of disease will be discussed. The purpose of the course is to present the problems of applied bacteriology in health, agriculture and industry. The sanitary production, handling and distribution of milk involving human and environmental contacts with a food often consumed raw is an important problem to be controlled by responsible citizens of the community. Discussions on milk include the various sources of milk infections, methods of controlling sanitary production and marketing and the detection and elimination of milk dangerous to the public health. Water supplies are of especial importance to man. The construction of wells, cisterns, etc., will be briefly considered and the application of sanitary measures to prevent and control their pollution will be discussed. The proper treatment and disposal of private and municipal sewage presents a problem of no small importance. Work has been planned in this course to present some of the problems pertaining to the sanitary production and distribution of foods; special attention will be given to the bacteriology of food preservation.
This course is designed to acquaint the student with the nature and importance of micro-organisms and thus better explain biological changes in nature and susceptibility to disease. (Animal Husbandry, Poultry and Dairy Manufactures majors.)
3 class hours a week. Credit, 3.

Bacteriology S-2 (Bacteriology and Rural Hygiene) II.

This course is a continuation of Bacteriology S-1 for Animal Husbandry and Dairy Manufactures majors.

3 class hours a week. Credit, 3.

Bacteriology S-4. (Dairy Bacteriology) II.

Bacteria and other micro-organisms are the responsible agents for changes which occur in milk, and for the contagion which sometimes causes diseases. They are found in milk at times when leaving the udder, they get in with the dust and dirt while milking and they adhere to the dairy utensils which carry them over from one milking to the next. From the cow to the consumer there is the constant presence of these micro-organisms to contend with, on the one hand, and to foster on the other.

Many of these changes occurring in milk are undesirable, such as ropy milk, sour milk, bitter milk, tainted milk, etc. Many of these changes are encouraged as the ripening of cream for butter, of milk for cheese, of milks for milk drinks. The former are fought, the latter fostered.

Micro-organisms of typhoid fever, scarlet fever, diphtheria and other diseases find their way by means of milk to the consumer and produce epidemic forms of these diseases.

Much time is spent in making plate counts and interpreting results. The different bacteriological tests are studied, such as Breed and Methylene Blue. The proper use of these methods will quickly enable one to locate the source of trouble and check any further continuance.

It is evident, therefore, that to handle milk and milk products safely it is desirable to know something of the agents which are the source of so much attention in the dairy. This indicates the nature of the substance of this course. This course is required of all students who elect dairying as one of their special lines of work.

3 3-hour laboratory periods a week. Credit, 5.

Beekeeping S-1. (Fall Management, Wintering, and Honey Marketing) I.

The students are given an opportunity for individual handling of bees in the early fall, and field studies are made of the bee colony and its organization. Studies and practice in fall feeding are followed by a similar treatment of winter protection and the bees are then prepared for winter. During the latter part of the semester the surplus honey is extracted and prepared for market, a laboratory study made of the product and, finally, the commoner bee diseases are discussed and methods of control pointed out.

1 class hour and 1 2-hour laboratory period a week. Credit, 2.

Beekeeping S-2. (Spring Management, Pollination, and Honey Production) II.

The first part of the semester is occupied in assembling and studying the equipment used in beekeeping, but as soon as the weather permits, work is resumed on the bees in the apiary. Studies are made in spring management; pollination in the apple orchards is particularly stressed, and attention is then turned to the preparation of the colonies for honey production.

Throughout the entire course, wherever possible, the work is made practical and individual, enough theory being given so that the student will understand the reasons for his manipulations.

1 class hour and 1 2-hour laboratory period a week. Credit, 2.

Botany S-2. (Diseases of Trees and Shrubs) II.

This course is planned for students majoring in Horticulture. Topics presented follow: (1) Concept of a fungus and bacterium. (2) Parasitism. (3) Type specimen of tree diseases; heartrot, saprot, barkrot. (4) Woodrots. (5) Bud, leaf, flower, and fruit blights. (6) Root and vascular parasites. (7) Non-parasitic diseases. With each type, closely allied forms are also presented together with the general methods for control. The types are taught objectively and definite periods set aside for oral quizzing.

1 class hour and 1 2-hour laboratory period a week. Credit, 2.

Business English S-1 and S-2. I. II.

To consist of personal or business letters, or writing of a similar nature, and an oral presentation (a five-minute address or talk on an assigned topic to be prepared for each week, and as many heard as time permits).
2 class hours a week and a 2-hour outside assignment. Credit, 2.

Business Law S-1. I.

Required for freshmen. To consist of a particular study of the contract drawing, reading and interpretation with specific problem work. Commercial paper, torts, equity and personal rights presented by lectures during the course. Particular stress is placed on the reasoning process.
3 class hours a week. Credit, 3.

Business Management S-1. I.

This course is designed primarily for students majoring in Floriculture. It involves a study of records and accounts used by florists; costs and prices; uses of capital and credit; house and store management; advertising; buying and selling; economic use of labor and equipment; general business trends as affecting the flower business; how the florist should make adjustments to meet economic changes; analyses of going concerns; and finally a bringing together of all the information studied and applying it to the successful organization of a business. The entire course is to be made as applicable and practical as possible.
2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Business Management S-3. I.

This course is designed primarily for students majoring in Dairy Manufactures. The principles of business organization and management are considered in relation to the successful operation of a dairy plant. The course includes a study of the following: various records and accounts used by dairies; costs and prices; uses of capital and credit; economic trends as affecting the business; how to make adjustments in the business to meet economic changes; analyses of different types of going concerns; and finally a bringing together of all the information studied and applying it to the successful organization of a business.
2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Entomology S-2. (Insects of Ornamental Trees and Shrubs) II.

A course designed to acquaint the student with the major pests injurious to ornamental trees and shrubs. Life histories of the insects concerned, the types of injury, and methods of control will be studied throughout the course. Recognition of the major pests will be attained by a study of mounted specimens and by a study of the insects collected by the students in the class.
2 class hours a week. Credit, 2.

Farm Management S-1 and S-2. (Farm Management and Accounts) I. II.

The work in this course involves a study of farm records and accounts; costs and prices of farm products; uses of capital and credit; types of farming, selection of crop and live stock enterprises; size, diversity and production as related to the successful farm business; farm layout and arrangement; economic use of labor, power and equipment; detailed analysis of both successful and unsuccessful farms, how the farmer should make adjustments to meet economic changes; and finally, a bringing together of the information gained and applying it to the successful organization of a farm business.

Actual farm records are used to illustrate the above points. The entire course is made as applicable and practical as possible.
2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Note. — Farm Management will be given both semesters. The first semester will be for students majoring in Animal Husbandry; the second semester for students majoring in Poultry Raising, Fruit Growing and Vegetable Gardening.

Forestry S-2. (The Elements of Forestry) II.

A course designed to give the student an introduction to the practice of forestry in New England with special reference to its application on the forested portions of farms and estates. The place of forestry in land management; the several objectives of forest management; brief outline of forest cultivation and improvement methods.

3 class hours a week. Credit, 3.

Forestry S-3. (Forest Measurement and Management) I.

A course designed to give the student a working knowledge of the methods employed in determining the volume of the forest-growing stock and its value; to develop an understanding of the natural history of the forest and to emphasize the fact that when a forest is skillfully managed it will yield its numerous products and benefits as annual or periodic crops. The principles of forest management underlying sustained yield are emphasized.

The field work in applied forestry is conducted on the Mt. Toby Forest.

1 class hour and 1 4-hour field period a week. Credit, 3.

Forestry S-4. (The Care and Cultivation of the Forest) II.

This course logically follows Forestry S-3 and is designed to teach the basic principles of forest production. The several classes of intermediate cuttings are systematically taught and demonstrated in the field. The natural reproduction methods are studied as well as basic work in seeding and planting as applied to forestry. Special attention is given to the principles involved in marking timber for removal and to the science of forest protection.

Field work in applied forestry is given on the college forest at Mt. Toby.

1 class hour and 1 4-hour field period a week. Credit, 3.

Home Economics S-1. (Food Selection) I.

This course is a study of the nutritional needs of persons of different ages and activity and the choice of foods to meet these needs. Consideration will also be given to food problems related to the experiences of one living away from home as well as to basic principles in the preparation and serving of simple meals. (Offered in 1937–38.)

1 class hour a week. Credit, 1.

Home Economics S-2. (Problems in Personal and Home Living) II.

This is a study of some of the problems in everyday living which must be considered intelligently if one is to become a useful member of society. (Not offered in 1937–38.)

1 class hour a week. Credit, 1.

Horticultural Manufactures S-1. I.

This course is designed for the students interested in food preservation, either as a business or for homemaking. The work covers the theories and practices of preserving fruits, vegetables and fruit products, together with the study of freezing and dehydration of foods.

Economy of manufacture is stressed. The student is required to keep an accurate record of costs and manufacturing operations.

1 class hour and 2 2-hour laboratory periods a week. Credit, 3.

Horticultural Manufactures S-2. II.

This is a continuation of Horticultural Manufactures S-1 and covers the study of manufacturing miscellaneous products. The work includes the manufacture of confections for both homemaker and small commercial producer, pickles and pickle products, maple products, citrus fruit products and the canning of meats, poultry and spring fruits and vegetables.

1 class hour and 2 2-hour laboratory periods a week. Credit, 3.

Horticultural Manufactures S-4. II.

The class and laboratory exercises in this course are planned to meet the needs of students majoring in Dairy Manufactures. General principles of food preservation and their application to the subject of dairying will be discussed in class exercises. Methods of preserving fruits and fruit products and judging and testing of commercial packs will be studied in the laboratory.
1 class hour and 2 2-hour laboratory periods a week. Credit, 3.

Public Speaking S-4. II.

Required of seniors interested in dramatic presentation and elective for the rest. This course is a continuation of the freshman course; but lays particular stress on the drama and dramatic presentation and public speaking. (All Dramatic presentation endeavored by the Two-Year Course, or other short courses to be under the direction of the instructor in Business English.)
2 class hours a week. Credit, 2.

Rural Sociology S-1, S-2 and S-4. (Social and Economic Problems) I. II

A study of the individual and his relationships and conflicts in society, particular note to be taken of rural society and its problems. Individual topics assigned, papers prepared and discussed in class.

The family effects of heredity and environment, rural health, rural education including the Extension Service, the Grange, community organization, rural religion, government as it affects the farmer, the Resettlement Administration, etc., are treated. The purpose of the course is to understand rural social institutions, particularly in New England, and methods for their improvement.
3 class hours a week. Credit, 3.

Soils and Crops S-1. (Soil Management) I.

Every agricultural interest is vitally concerned with the soil, its adaptations and its management for plant production. This course treats of the selection of suitable soils for the special purposes of agriculture, horticulture and floriculture.

Laboratory includes training in the use and interpretation of the maps of the U. S. Soil Survey and in tests of soil texture, organic matter and soil acidity. Practical field work will be given in judging the crop adaptation and value of soils, and field demonstration of the use of tillage tools on the college farm.

As a field project the student will be required to make a study of some farm, nursery or florist's plant, from the standpoint of soil conditions and methods of soil management in relation to the enterprise as a whole.
2 class hours and 1 3-hour laboratory period a week Credit, 3.

Soils and Crops S-2. (Fertilizers) II.

This course deals with the origin, manufacture, purchase and use of commercial fertilizer materials. A study will be made of the interpretation of fertilizer formula, analysis and guarantee. Special attention will be given to the newer concentrated fertilizer materials and to those produced from atmospheric nitrogen. The laboratory work will give practice in the identification of fertilizer materials, in the calculation of fertilizer formulas, and in the preparation of fertilizer mixtures.
2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Soils and Crops S-4. (Field Crops) II.

The lecture hours of this course will be devoted to presentation and discussion of the most successful methods of fertilizing, cultivating, harvesting, and storing the field crops grown in New England. Special attention will be given to the choice of the best adapted varieties for the production of hay, pasture, corn, potatoes, and root crops.

The laboratory work will include the study of corn and potato varieties, identification of grass and weed species, and studies of purity and germination. Field observation of growing crops will be included as the season permits.
2 class hours and 1 2-hour laboratory period a week. Credit, 3.

Soils and Crops S-5. (Construction and Maintenance of Fine Turf Areas) I.

At the completion of this course the student should have a knowledge and appreciation of the requirements for the growing of lawns and sports turf. He will have considered the construction of turf areas; seed indentification, selection and sowing; the identification of turf grasses and their soil and fertilizer preferences, correct cultural practices, turf diseases and pests and their control.

1 class hour and 2 2-hour laboratory periods a week. Credit, 3.

Veterinary Science S-1. (Animal Sanitary Science) I.

Conservation of the health of animals is the keystone of successful animal husbandry. This course acquaints students with the essentials upon which the health of animals depends. In order that students may later guard the animals in their charge, attention is given to conditions favoring communicable and non-communicable diseases, and to prophylactic measures.

3 class hours a week. Credit, 3.

Veterinary Science S-2. (Applied Animal Sanitary Science) II.

For Animal Husbandry major students. A continuation of S-1. The more common diseases of cattle, horses, sheep, and swine will be studied. Causes; development; emergency; control; eradication; and prophylactic meaures will be emphasized.

3 class hours a week. Credit, 3.

Farm Practice.

Individual tests are given all students as indicated in the various course programs in both milking and harnessing and teaming. The students are graded either very good, good, satisfactory or unsatisfactory. Those who have not had sufficient experience to satisfactorily pass these tests are required to take additional practice by appointment with the Farm Superintendent. Not more than two students are scheduled each day for practice in milking under the supervision of the herdsman, and those not satisfactorily passing the teaming test are scheduled for individual work with the teamsters on the College Farm. Those who pass the test as satisfactory, but who wish additional practice may do so by appointment. The opportunity is available for any who wish to secure additional skill in farm operations such as plowing, harrowing, etc.

This assignment in developing necessary farm skills is an important part of the vocational training program of each course during the fall semester of the first year and a complete report on each students' skill and ability is submitted to the Short Course Office and to the Director of Placement Service, who has charge of locating all placement jobs. Students failing to pass these tests satisfactorily inevitably limit themselves from securing the better placement positions.

PHYSICAL EDUCATION

Women

This program aims at an all-round development of the student. It gives the student activity adapted to her needs; assists in overcoming remediable physical defects and bad health habits; it encourages good health standards, helps her build up skill in sports and games and swimming and leaves her with possibilities for spending leisure time wisely.

Required Courses

Physical Education S-1. I.

Outdoor season — field hockey, soccer, games, special gymnastics, swimming.

Indoor season — basketball, folk dancing, games, special gymnastics, swimming, volley ball.

2 class hours a week. Credit, 2.

Physical Education S-2. II.
Indoor season — badminton, basketball, and tap dancing, special gymnastics, indoor baseball, swimming, volley ball.
Outdoor season — archery, baseball, special gymnastics, tennis, swimming.
2 class hours a week. Credit, 2.

Hygiene S-1. I. (For Freshmen)
Lectures on personal hygiene, including the physiological basis for sound health habits, the importance of the systematic planning of a student's daily program in order to provide the proper amounts of time for study, with suitable periods of sleep, relaxation, recreation, and sports; posture, appropriate types of exercise, proper nutrition, social adjustment, the necessity for frequent medical, optical, and dental advice; sanitation and group health requirements.
1 class hour a week. Credit, 1.

ELECTIVE COURSES

Physical Education S-3 and S-4. I. II. (For Seniors)
The senior program is arranged to give the student an opportunity to express her desire for wholesome physical recreation, to further develop desirable character traits and social qualities and qualities of leadership.
2 class hours a week. Credit, 2.

Men

REQUIRED COURSES

Physical Education S-1. I. (Recreation. — For freshmen. Outdoor games.)
The following outdoor games are taken up: Soft ball, touch football, soccer, golf, and swimming. Men may elect football or cross-country. The course aims to give every man the opportunity to develop sufficient control over his body to enable him to get pleasure from physical activities and to establish correct health habits.
2 laboratory hours a week for first half semester. Credit, 1.

Physical Education S-5. I. (Recreation. — For seniors. Outdoor games.)
Includes the games of badminton, volley ball, archery and swimming, with the object of giving the men a fund of exercise material for use in after school days. Men may elect football or cross-country.
2 laboratory hours a week for first half semester. Credit, 1.

Student Health S-3. I. (Hygiene. — For freshmen.)
Lectures on personal hygiene including the physiological basis for sound health habits, the importance of the systematic planning of a student's daily program in order to provide the proper amounts of time for study with suitable periods of sleep, relaxation, recreation and sports; posture, appropriate types of exercises, proper nutrition, social adjustment, the necessity for frequent medical, optical and dental advice, sanitation and group health requirements.
1 class hour a week. Credit, 1.

ELECTIVE COURSES

Physical Education S-4. II. (Recreation. — For freshmen and seniors.)
(Basketball, Hockey, Indoor Track, Boxing and Wrestling.) January–March.
Students electing this course must be regular members of the basketball, hockey, or indoor track squads and report regularly for practice with those squads. Boxing and wrestling men report on scheduled days. Credit, 1.

Physical Education S-6. II. (Recreation. — For seniors. Baseball.)
Students electing this course will be divided into teams which will play an intramural schedule. These men must report regularly for practice and games whenever scheduled. Credit, 1.

APPLICATION FOR ENROLLMENT IN THE STOCKBRIDGE SCHOOL OF AGRICULTURE

Name.....Date.....
City or
Town.....Street.....State.....

Present Occupation.....Age.....

School or College Attended:

Name of School.....Number of Years in High School:.....

Place.....

Indicate by a check mark the course in which you desire to register. Do not check more than one.

1. Animal Husbandry
2. Dairy Manufactures
3. Poultry Husbandry
4. Fruit Growing
5. Floriculture
6. Vegetable Gardening
7. General Horticulture
8. Wildlife Management

References.—I am personally acquainted with the above applicant, and know.....to be of good moral character, industrious, studious, and physically capable.

1. Name.....Position.....

Address.....

2. Name.....Position.....

Address.....

(Two references are required, and should not be members of your own family. Your minister and your teacher, or a former employer, are desirable. These persons should sign the application themselves.)

Mail this blank to ROLAND H. VERBECK, *Director of Short Courses*
MASSACHUSETTS STATE COLLEGE, AMHERST, MASS.

Important:—Be sure to file citizenship certificate if State tuition rate is claimed.

SHORT COURSES AT THE MASSACHUSETTS STATE COLLEGE

Short courses are based on the idea that the motive which inspires study is the most significant factor in study itself, and that this motive rises when the student himself realizes he faces a problem that calls for a solution. Therefore there is no age limit. Enrolled in short courses are found the young and the old, the experienced and the inexperienced, the theoretical and the practical. In this grouping there is a value, since students learn from each other as well as from the instructors. Practically all Short Course students intend to make a direct application of the knowledge given. Hence the aim of Short Course work is to offer the largest amount of information and training in agricultural and horticultural lines in the shortest possible time. During the past twenty years Short Courses have served hundreds of students in this Commonwealth, and the demand for these courses in recent years has steadily continued.

DIRECTORY OF INFORMATION

A. The College.

Those desiring college catalogs and other pamphlets giving full information relative to entrance requirements, courses of study, expenses, opportunities for student labor, and so forth, and those with questions regarding admission to the college, either to the freshman class or to advanced standing should address William L. Machmer, Dean of the College, Amherst, Mass.

B. The Graduate School.

Questions relating to courses offered leading to the degrees of Master of Science and Doctor of Philosophy, admission and work required, should be addressed to Fred J. Sievers, Director of the Graduate School, Amherst, Mass.

C. Short Courses.

For information concerning the Short Course Units, the Stockbridge School of Agriculture, the College Summer School, write or apply to Roland H. Verbeck, Director of Short Courses, Amherst, Mass.

Tentative Dates for Short Courses

The following courses or group programs will be offered in 1937–1938, but are subject to changes as may be necessary.

Nine Weeks' Course in Poultry Raising — Unit 1 (November 15–24; November 29–December 7.) Unit 2 (December 8–17; January 3–7.) Unit 3 (January 10–28.)

Ten Weeks' Course in Greenkeeping. January 3–March 14

Practical and Scientific Course for Florists January 3–March 12

Ten Day Course in Dairy Bacteriology. (January 3–15.)

Five Day Course in Milk and Cream Testing; Analyzing and Inspecting Milk Products. (January 17–22.)

Five Day Course in Milk Plant Operation and Manufacture of Surplus Milk Products. (January 24–29.)

Five Day Course in Ice Cream Making for beginners. (January 31–February 5.)

Five Day Course in Ice Cream Making for experienced students. (February 7–12.)

Five Day Course for Tree Wardens and Town Foresters. (March 21–26.)

For catalog of any of the schools, write
Director of Short Courses, M. S. C., Amherst, Mass.

CERTIFICATE OF CITIZENSHIP

The Massachusetts State College charges a tuition fee of $110 a semester to students who are not residents of Massachusetts. In order to satisfy the college authorities that an applicant is entitled to state tuition of $50 a semester, they require a statement signed by the clerk of the city or town in which the applicant resides, certifying to the fact that the parent or guardian of the applicant is a legal resident of said city or town. Where the guardian is certifying to this statement, it will be necessary for him to furnish copies of his appointment by the court. Such a statement may be made on the form below. If this is not presented when the student registers, the Treasurer has no option but to collect tuition on the above basis. When requesting the City Clerk to sign this certificate, an applicant for admission to the college should give the name and address of the parent or legal guardian.

This is to certify that I am the father.....mother.....legal guardian

.....of.....
Student's Name

Signed.....

This is to certify that on the date specified below

.....is a legal resident of.....
Above Signee

....., Massachusetts.
Town or City

Signed.....
Town or City Clerk

Date.....
Seal

Mail this blank to ROLAND H. VERBECK, *Director of Short Courses*

MASSACHUSETTS STATE COLLEGE, AMHERST, MASS.

This certificate must be filed with application blank if lower tuition rate for citizens of Massachusetts is to be secured.

Bulletin
MASSACHUSETTS
STATE COLLEGE

Winter Courses
1937-1938

The Winter Short Courses at Massachusetts State College are arranged primarily for the convenience of men and women engaged in the agricultural industry who wish to use the opportunity afforded by the winter season for study and practice under professional supervision. The courses are arranged in units of varying duration from the five-day courses in dairying to the eleven-weeks' course in greenkeeping. All courses are described on the following pages.

The College reserves, for itself and its departments, the right to withdraw or change the announcements made in its catalogue or in any of its official publications.

Amherst, Massachusetts

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1500 10-'37. No. 2535.

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Treasurer of the College

ROLAND H. VERBECK, B.S.
Director of Short Courses

The Faculty of Instruction for Winter Short Courses

LUTHER BANTA, B.S. . . . . Poultry
Assistant Professor of Poultry Husbandry

WILLIAM H. DAVIS, Ph.D. . . . . Botany
Assistant Professor of Botany

LAWRENCE S. DICKINSON, M.S. . . . . Agronomy
Assistant Professor of Agronomy

JULIUS H. FRANDSEN, M.S.A. . . . . Dairy Industry
Professor of Dairy Industry and Head of Department

CHRISTIAN I. GUNNESS, B.S. . . . . Agricultural Engineering
Professor of Agricultural Engineering and Head of Department

ROBERT P. HOLDSWORTH, M.F. . . . . Forestry
Professor of Forestry and Head of Department

S. CHURCH HUBBARD . . . . . Floriculture
Assistant Professor of Floriculture

HARRY G. LINDQUIST, M.S. . . . . Dairy Industry
Assistant Professor of Dairying

MERRILL J. MACK, M.S. . . . . Dairy Industry
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Assistant Professor of Bacteriology

J. HARRY RICH, M.F. . . . . Forestry
Assistant Professor of Forestry

DONALD E. ROSS, B.S. . . . . Floriculture
Instructor in Floriculture and Greenhouse Foreman

WILLIAM C. SANCTUARY, M.S. . . . . Poultry
Professor of Poultry Husbandry

FRANK R. SHAW, Ph.D. . . . . Entomology
Instructor in Entomology and Beekeeping

CHARLES H. THAYER . . . . . Agronomy
Assistant Professor of Agronomy

CLARK L. THAYER, B.S. . . . . Floriculture
Professor of Floriculture and Head of Department

EMIL J. TRAMPOSCH, B.S. . . . . Horticulture
Instructor in Horticulture

JOHN H. VONDELL . . . . . Poultry
Instructor in Poultry Husbandry and Foreman of Poultry Plant

FRANK A. WAUGH, D.Sc., L.H.D. . . . . Landscape Architecture
Professor of Landscape Architecture and Head of Department

MASSACHUSETTS STATE COLLEGE
WINTER SHORT COURSES

The Winter School Short Courses have been maintained by the college for over twenty-five years. They meet a definite need in providing instruction for groups of men and women who can leave their regular duties during the winter months. The school closes in time for students to begin practical work in the spring.

The following courses or group programs are offered:

1. Poultry Raising—Unit 1 (Nov. 15-24: Nov. 29—Dec. 3) Unit 2 (Dec. 6-17: Jan. 3-7) Unit 3 (Jan. 10-28).
2. Greenkeeping (An eleven weeks' course—(Jan. 3—March 14).
3. Advanced School for Greenkeepers. (Course A—January 3 to February 5; Course B—February 7 to March 14.)
4. Practical and Scientific Course for Florists (January 3 to March 12).

Each of these courses requires a definite number of students as a minimum if the course is to be given. Also there is a maximum limit to the size of classes, and in the greenkeeping course early application is always advisable. See explanation of limited enrolment under each course on following pages.

In addition to these longer courses there are other courses offered for shorter periods of time and less expense, as follows:

5. Dairy Bacteriology Course—Monday, January 3, 1:00 P.M. to Saturday, January 15, 12 M.
6. Milk and Cream Testing; Analyzing and Inspecting Milk Products—Monday, January 17, 1:00 P.M. to Saturday, January 22, 12 M.
7. Milk Plant Operation and Manufacture of Surplus Milk Products—Monday, January 24, 1:00 P.M. to Saturday, January 29, 12 M.
8. Ice Cream; Testing and Analyzing Ingredients Used in Ice Cream Making, the Standardizing of Mixes and Freezing—Monday, January 31, 1:00 P.M. to Saturday, February 5, 12 M.
9. Ice Cream Making for Experienced Men—Monday, February 7, 1:00 P.M. to Saturday, February 12, 12 M.

The Dairy courses are so arranged that a student may take any one or all of them if he desires.

10. Five-Day Short Courses for Tree Wardens and Town Foresters—
    Course A—Monday, March 14, 1:00 P.M. to Saturday, March 19, 12 M. (For men not previously registered in this course.)
    Course B—Monday, March 21, 1:00 P.M. to Saturday, March 26, 12 M. (For men who have taken the Tree Wardens' Course before.)

Winter School certificates will be awarded to students who complete the full work in the courses taken, with satisfactory grades.

Entrance Requirements

No entrance requirements have been fixed other than that the student shall be at least eighteen years of age and shall have completed the elementary or common schools.

Tuition, Fees and Expenses

There is a tuition fee of $10.00 for the full Ten Weeks' Winter School Program and each student is required to pay to the Treasurer a $5.00 registration fee. There are no laboratory fees in connection with any of the courses. The registration fee and tuition fee must be paid to the Treasurer of the college at the time of registration. There is also a health fee of $1.50 for the full term, not for the five-day or ten-day courses.

Board may be obtained at the college dining hall cafeteria service for $6.50 weekly, meal ticket plan. Rent for furnished rooms in private houses varies in price from $2.50 to $4.00 a week for each occupant.

The Short Course Office will be glad to assist students in locating rooms.

Registration at Short Course Office, South College

All Poultry students register on Monday, November 15, for the first unit of work. Registration for Greenkeepers and Florists will be held on Monday, January 3. Other short courses register on the Monday forenoon of the beginning week, with classes starting at 1:00 P.M. the same day. All fees are payable at College Treasurer's Office at time of registration.

Upon arrival the student should report at the office of the Director of Short Courses, located in South College; call Amherst 900, if telephoning.

APPLICATION FOR ENROLMENT IN THE WINTER SCHOOL SHORT COURSES

I hereby make application for admission to the following Winter Short Courses:

Date .....

Name .....

Home Address .....

Business Address .....

Age ..... Present Occupation .....

Previous Schooling .....

Check special course or courses in which you desire to register.

1. The Winter Course in Poultry Raising
   Unit 1 (Nov. 15-24: Nov. 29—Dec. 3).
   Unit 2 (Dec. 6-17: Jan. 3-7).
   Unit 3 (Jan. 10-28).
2. Practical and Scientific Course for Florists (Jan. 3—Mar. 12).
3. Ten-day course in Dairy Bacteriology (Jan. 3-15)
4. The Five Day Dairy Courses:
   (a) Milk and Cream Testing: Analyzing and Inspecting Milk Products (Jan. 17-22)
   (b) Milk Plant Operation and Manufacture of Surplus Milk Products (Jan. 24-29)
   (c) Ice Cream; Testing and Analyzing Ingredients Used in Ice Cream Making, the Standardizing of Mixes, and Freezing (Jan. 31—Feb. 5)
   (d) Ice Cream Making for Experienced Men (Feb. 7-12)
5. Five-day Short Courses for Tree Wardens and Town Foresters
   A.—Survey Course (For students not previously in attendance.) (March 14-19.)
   B.—Advanced Course (For students previously in attendance, or in attendance at Survey Course, March, 1938. (March 21-26.)

Mail this blank to Roland H. Verbeck, Director of Short Courses, Massachusetts State College, AMHERST, MASS.

Note—File application blank in back of catalogue if for Greenkeeping Course.

WINTER COURSE IN POULTRY RAISING

November 15, 1937 to January 28, 1938

General Information

This nine-week short course will begin on November 15, 1937 and class work will close on January 28, 1938. Students will register at the Short Course Office on Monday, November 15, from 9:00 A. M. to 12:00 M. Classes begin at 1:00 P. M. the same day.

Thanksgiving Day recess begins on Wednesday, November 24, at 12:00 M., and continues to Monday, November 29, at 8:00 A. M. Christmas vacation extends from December 18, 12:00 M., to January 3, at 8:00 A. M.

The number of students will be limited to twenty; unless six students register the course will not be given. Applications should be sent early as students will be accepted in the order of their application. (See blank on page 4.)

Aim.—The purpose of this course is to give the students a good survey of the entire field of poultry production and cover the work as intensively as time will permit. It is designed for those who wish to follow poultry keeping as a vocation and who can spend but a short time in preparation.

Facilities.—Our large poultry plant of 1500 birds, equipped with modern incubators and brooders of various kinds, together with other adequate equipment and laboratories, will be at the service of students in carrying on their laboratory work.

The M. S. C. Poultry Club, a student organization, meets twice a month for special discussions on current topics and lectures by prominent poultrymen or specialists.

Entrance Requirements

There are no entrance examinations for admission, but students must be at least eighteen years old and have educational training through the elementary school, that is, eighth grade.

Tuition and Expenses

There is a tuition fee of $9.00 for the full course, or $3.00 for each three-week unit. A registration fee of $5.00 will be charged for the full course and a pro rata fee for a three week unit. These fees must be paid at the time of registration and need not be sent in advance.

Board can be secured at the College dining hall, cafeteria service, for $6.50 per week and rooms in private houses near the campus cost $2.50 to $4.00 a week. Textbooks will cost $5.00 to $10.00. One hundred dollars should cover all necessary expenses for the full course.

Rooms may be secured at time of registration from approved lists at Short Course Office.

CALENDAR 1937—1938

First Term	November 15-24: November 29—December 3
Second Term	December 6-17: January 3-7
Third Term	January 10—January 28

SCHEDULE OF CLASSES BY TERMS 1937—1938

First Term		*Second Term*		*Third Term*	
W-1 Judging	7 hrs.	W-4 Feeding	7 hrs.	W-7 Management	7 hrs.
W-2 Marketing	7 hrs.	W-5 Incubation	7 hrs.	W-8 Brooding	7 hrs.
W-3 Housing	7 hrs.	W-6 Breeding	7 hrs.	W-9 Diseases	7 hrs.

Description of Courses

W-1. Poultry Judging.—A study of the characters effected by egg production and those that limit egg production in the individual. Trapnested birds with known records are constantly used to check the student's judgment in estimating production. This knowledge has direct applicability in the constant elimination of non-producers from the flock, and the selection of outstanding breeders.

W-2. Marketing Poultry Products.—This course covers candling and grading of eggs, market classification of poultry and eggs, judging eggs, fattening, killing, picking, drawing and judging of live and dressed poultry.

W-3. Poultry Housing.—A careful study is made of the various physical and biological factors which are involved in keeping houses comfortable, dry and hygienic. The several types of houses on the College plant furnish good practice and study material.

W-4. Poultry Feeds and Feeding.—This course embraces a study of the fundamental principles of nutrition, and their application to the problems of feeding the poultry flock—the most expensive item in the grower's budget. Feeding the growing stock, the laying flock, and fattening are all included.

W-5. Incubation.—A study of incubation principles and practices is made in conjunction with the incubators in the well-equipped cellar at the College plant.

W-6. Poultry Breeding.—The course combines in class and laboratory genetic theory and breeding applications. The various methods of selection are studied. Birds at the College are mated. The vital data about each breeder is recorded and studied in an up-to-date system of pedigree record keeping.

W-7. Poultry Farm Management.—The modern trends of commercial poultry farm organization are studied by the survey method. Each student will prepare detailed plans for a farm he now owns or might hope to develop in the future. These plans will emphasize and correlate the work in breeding, incubation, brooding, growing, market egg and meat production, marketing and accounting.

W-8. Brooding.—Brooding, as one of the most important phases of the poultry industry, is taught with the aid of modern equipment such as coal burning and electric brooders, and several kinds of battery brooders.

W-9. Disease Prevention.—Embraced in this course are studies of normal and pathological anatomy; sanitary programs of disease control; and the use of disinfectants, vermifuges and remedies of known efficacy.

This course is so organized that a student may take any term or combination of terms that he wishes, completing the course in succeeding years if it is found necessary.

WINTER COURSE FOR GREENKEEPERS

January 3 to March 14, 1938

A specialized course for men engaged in the profession of greenkeeping, or members of green committees. The courses are so arranged that all the factors of successful turf management are discussed individually and particularly in their relation to one another. The subjects as outlined can be effectively studied during the winter months.

General Requirements

An applicant for this school must be either a member of the green committee, a greenkeeper, or must have had experience on a golf course, and the application blank must be countersigned by the greenkeeper and chairman of the green committee.

No entrance examinations are required, but it is expected that the student will have a reasonable education in the English language.

The number of students is limited.

The college reserves the right to reject any applicant obviously unqualified for the work, or to dismiss any student for misconduct, or failure to properly meet the requirements of the course.

The winter school certificate will be given only to those who complete the full course with credit.

Registration January 3. Classes begin January 4.

Courses Offered

Course	*Weekly Periods*	*Length of Course*
Landscape Appreciation	1 Lecture	Full Term
Botany	1 Laboratory, 2 Lectures	Full Term
Entomology	1 Lecture	Full Term
Water Systems	2 Laboratories, 3 Lectures	Five Weeks
Drainage	2 Laboratories, 3 Lectures	Five Weeks
Equipment	3 Laboratories, 2 Lectures	Five Weeks
Managerial Problems	3 Laboratories, 1 Lecture	Five Weeks
Grasses and Turf Culture	3 Laboratories, 2 Lectures	Six Weeks
Cost Keeping and Analysis	3 Laboratories, 2 Lectures	Four Weeks
Soils and Fertilizers	2 Laboratories, 2 Lectures	Full Term

Forum and special lecture hour daily during full term.

Description of Courses

I. Water Systems.—A study of standard types of water systems, with particular reference to the relation of size of pipe, pressure and nozzles, to the flow and delivery of water. *Professor C. I. Gunness*

II. Soils and Fertilizers (Special for Greenkeepers).—Fundamental properties of soils and their management as related to golf green conditions will constitute the main part of the course. The study of fertilizers and their uses will be made as complete as possible. Individual problems and discussions will be given all the time and attention warranted. *Department of Agronomy*

III. Equipment.—All major and minor equipment and materials used in golf course maintenance are not only thoroughly studied, but the factors influencing their economic use and possible cumulative effect upon the cultural condition of the turf are noted. *Assistant Professor L. S. Dickinson*

IV. Managerial Problems.—This course uses for its laboratory a very large and complete model of a golf course, about which the many problems of a greenkeeper are studied and the influencing factors noted.

The making and presentation of reports to green chairmen and committees is also a part of this course. *Assistant Professor L. S. Dickinson*

V. Grasses and Turf Culture.—At the completion of this course the student should be able to identify the various turf grasses and to thoroughly understand their cultural requirements. The various cultural practices and their effects are carefully studied and turf diseases and pests are also included in this course.

Assistant Professor L. S. Dickinson

VI. Drainage.—The entire problem of land drainage will be discussed and practical problems worked out. The student will be taught the use of the level and how to set ditch grades. *Assistant Professor M. J. Markuson*

VII. Botany for the Greenkeeper.—Laboratory demonstration and lecture discussions dealing with the living plant and its parts and consideration of the work performed by each part. *Assistant Professor W. H. Davis*

VIII. Entomology for the Greenkeeper.—This course contains a brief introduction as to what insects are and their relationships. The greater part of the course will be devoted to identification, life history and control measures of insects, damaging greens. *Dr. Frank R. Shaw*

IX. Cost Keeping and Analysis.—The value of cost keeping and its analysis will be demonstrated, and a method of cost keeping will be taught. The many factors that enter into the cost will be noted, analyzed and adapted to individual problems. The distribution and directing of the workmen will also be studied.

Assistant Professor L. S. Dickinson

X. The lectures on landscape appreciation will be given by Professor Frank A. Waugh, Head of the Department of Landscape Architecture.

Forum and Special Lecture Hour.—One hour is set aside daily for a summarization of the preceding day's work, or for discussions with any visiting greenkeeper, green chairman, or for special lectures. *Assistant Professor L. S. Dickinson, Leader*

Information

For further information write to the Director of Short Courses, or to Professor Lawrence S. Dickinson, Department of Agronomy, Massachusetts State College, Amherst, Massachusetts.

ADVANCED SCHOOL FOR GREENKEEPERS

Admission to this school is limited to those who have previously attended the regular Winter School for greenkeepers at this institution.

Two courses are offered, each having a different curriculum.

Course A.—January 3 to February 5; Course B.—February 7 to March 14.

Expenses

	Tuition	*Registration*	*Health Fee*
One Course Only	$5.00	$2.50	$1.50
Both Courses	10.00	5.00	1.50

PRACTICAL AND SCIENTIFIC COURSE FOR FLORISTS

January 3 to March 12, 1938

A special course for men and women already engaged in practical work in commercial floriculture arranged in co-operation with the Boston Gardeners' and Florists' Club.

General Requirements

The number of students will be limited to fifteen; unless ten students have registered by December 27, 1937, the course will not be given. Applicants should register early as they will be accepted in the order of their application.

Entrance examinations are not required but it is expected that every student will have had some practical experience in floricultural work and that he will have completed the elementary or common school work. Each applicant should present a personal recommendation from his employer or from some person of his acquaintance, showing the experience of the applicant in floricultural work.

The college reserves the right to reject any applicant obviously unqualified for the work or to dismiss any student whose presence, for any reason, proves detrimental to the other members of the school.

Those who complete the entire course with credit will receive the Winter School certificate of the College.

Expenses

	Low	*High*
Registration	$ 5.00	$ 5.00
Tuition Fee	10.00	10.00
Board (10 week at $6.50—$7.00)	65.00	70.00
Room Rent (10 week at $2.50—$4.00)	25.00	40.00
Textbooks	10.00	15.00
Health Fee	1.50	1.50
	$116.50	$141.50

Description of Courses

1. *Soils and Fertilizers.*—Origin of soils, soil types, soil moisture, tillage, organic matter, humus, fertilizers, mixing and application of fertilizers, soil sampling and testing.
2 class hours and 1 2-hour laboratory period a week.

Assistant Professor Charles H. Thayer

2. *Greenhouse Construction and Heating.*—Origin growth and importance of the floricultural industry; development of the greenhouse; types of houses and construction; methods of greenhouse heating. Trips may be taken to visit greenhouse establishments in the vicinity of Amherst.
2 class hours a week. *Professor Clark L. Thayer*

3. *Greenhouse Management.*—A study of the principles underlying the management of greenhouses, including soils, fertilizers, watering, ventilation, temperature regulation, insect and disease control.
2 class hours a week. *Assistant Professor S. Church Hubbard*

4. *Propagation of Plant Materials.*—This course will present the principles of plant propagation with special reference to their application to plant materials in greenhouse and nursery practice.
2 class hours and 1 2-hour laboratory period a week. *Mr. Emil J. Tramposch*

5. *Commercial Production.*—Special attention will be given to methods of culture (under glass) of roses, carnations, chrysanthemums, violets, and sweet peas. Other cut flower crops and various potted plants will also be considered.
3 class hours a week. *Assistant Professor S. Church Hubbard and Mr. Donald E. Ross*

6. *Garden Materials.*—A study of the annuals, biennials, herbaceous perennials, and bedding plants which are used in outdoor work. Methods of propagation, culture, and uses will be considered.
2 class hours a week. *Professor Clark L. Thayer*

7. *Flower Arrangement.*—A study of the principles underlying the use of flowers in funeral sprays and designs, table decorations, corsages, vase, bowl and basket arrangements; decorations for public functions; study of color with reference to such work.
5 class hours a week for three weeks. Laboratory work by arrangement.

Professor Clark L. Thayer and Mr. Donald E. Ross

8. *Plant Diseases.*—The diseases attacking floricultural crops—how to identify them, how they grow and develop, cultural practices favoring disease, and methods of control.
5 class hours a week for four weeks. *Assistant Professor William H. Davis*

9. *Insect Pests.*—A study of the insects injuring floricultural crops, how to recognize them and their work in different stages, their habits and life histories, conditions favoring their development, and the most effective control measures.

5 class hours a week for three weeks. *Dr. Frank R. Shaw*

10. *Discussions and Special Lecture Hour.*—Weekly meetings for the discussion of current problems in the floricultural industry or for lectures by individuals engaged in commercial work. Members of the class may also be assigned special topics for presentation.

1 class hour a week.

Information

For further information write to the Director of Short Courses, or to Professor Clark L. Thayer, Massachusetts State College, Amherst, Massachusetts.

WINTER SHORT COURSE IN DAIRY BACTERIOLOGY
(Methods for Testing Milk)

January 3 to January 15, 1938

General Information

Each year numerous requests are received by this department for individual instruction in modern bacteriological methods for testing milk. The majority of these requests are due to the interest of the modern dairy man in the quality of his product, as expressed by results of chemical and bacteriological examinations and a desire to more accurately control production on the farm and in the dairy plant. A two weeks' course on modern testing methods has been designed to meet the need of the dairy man who wishes to provide a means of making these bacteriological tests in his own plant laboratory.

Admission and Registration

There is no prerequisite for the course. Students must be at least eighteen years of age and must have completed the elementary or common schools.

Students should enroll by mail. See special application blank in front of announcement. Early registrations will be given preference.

Ten students will be the maximum number admitted to this course. Unless five students have registered prior to the opening day, the course will not be given.

Tuition, Fees and Expenses

There is a tuition fee of two dollars and each student is required to pay the Treasurer a registration fee of two dollars per course.

Description of the Course

Five afternoons each week will be devoted to laboratory discussions, demonstrations and manipulation of the Breed and Brew, Frost Micro Plate, Methylene Blue Reduction, Burri and Standard Plate Methods of examining milk. Each student will be given ample opportunity to perform these tests on numerous milk samples. Instruction will also be given in the correct use and care of the compound microscope.

Mornings may be spent in the department or college library where there are available numerous books and pamphlets on dairy bacteriology and the relationship of milk and milk products to the Public Health.

Information

For further information write to the Director of Short Courses, or to Professor Leon A. Bradley, Massachusetts State College, Amherst, Mass.

WINTER SHORT COURSES IN DAIRYING

January 17 to February 12, 1938

The courses are intended not only for experienced milk plant, ice cream and creamery men, but for men with little dairy experience, who have a desire for knowledge in the various dairy manufacturing fields. Those who are inexperienced should plan to take all four courses. Farm men and women, who are responsible for milk handling, butter making, or the making of soft cheese will find the first and second courses adapted to their needs.

There are no prerequisites for the courses. A certificate showing the subject studied is given at the end of each course to those doing satisfactory work.

Admission

There are no entrance requirements except that the student must be eighteen years of age and must have a common school education.

Registration

Students should enroll by mail. See application blank in front of announcement.

Enrolments for each of the four dairy courses described in the following paragraphs should be made at least three days prior to the beginning of the course. Those failing to enroll by mail may do so on arrival for the course. The work begins for each course on the afternoon of the opening day. Therefore, those enroling should arrive early enough in the morning so that time is available for registering, securing accommodations, etc.

Early registrations are given preference. A maximum of 20 will be adhered to for all courses. Second courses will be given in case the number of registrants warrant it.

All applications for entrance to these courses should be addressed to the Director of Short Courses, Massachusetts State College, Amherst, Mass.

Upon arrival the students should report at the office of the Director of Short Courses in South College, for information concerning rooming accommodation and for registration.

Tuition, Fees and Expenses

There is a tuition fee of two dollars for each course, and each student is required to pay the Treasurer a registration fee of two dollars per course.

Students will need white suits for laboratory work, and may wish to purchase one or more textbooks for each course.

Board may be obtained at the college dining hall at $6.50 a week or in private boarding houses from $6.00 to $7.00. Rent for furnished rooms in private houses varies from $2.50 to $5.00 a week for each occupant.

Description of Courses

Course I. Milk and Cream Testing; Analyzing and Inspecting Milk Products—(January 17—22)

This course is designed to help men and women to become proficient in operating the Babcock test, acidity test, use of the lactometer, the Methylene Blue test and Plate Counts, as well as other methods commonly used in testing, analyzing, and inspecting dairy products.

The course should be of special value to those interested in dairy inspection work, cow testing association positions, or laboratory control work which is essential in milk handling.

Opportunity is given during the course to secure the Massachusetts Babcock Testing certificate.

Course II. Milk Plant Operation and Manufacture of Surplus Milk Products—(January 24—29)

This course should help milk plant and creamery employees to a better understanding of the essentials involved in the scientific handling of milk and creamery products.

Some of the lecture and discussion topics are: general scope of the market milk industry, value of milk as a food, relation of bacteria to milk, sanitary production, marketing, plant construction and selection of equipment, processing, delivery, handling surplus, standardizing, grading, and labeling, and care of milk in the home. Special attention will be given to economic methods of marketing surplus milk through cottage and other soft cheeses, and commercial buttermilk.

Laboratory exercises will cover milk sampling, the scoring of dairies, cream line problems, the scoring of milk, the study of milk plant equipment, milk processing, the manufacture of commercial buttermilk, of cottage, neufchatel, and cream cheese and butter.

Practical application of dairy tests and of lecture work will be carried out in the college creamery and dairy barn.

Course III. Ice Cream; Testing and Analyzing Ingredients Used in Ice Cream Making, the Standardizing of Mixes, and Freezing (January 31 — February 5)

This course is planned for those wishing to enter the ice cream business, but have had no previous experience along this line.

Lecture and laboratory work will cover the selection of ingredients for the ice cream mix, standardizing and calculating the mix, processing the mix, freezing and yield control, causes and remedies of ice cream defects, etc. Actual experience will be secured in making ice cream mixes and freezing work. Different kinds of ice cream will be made, as well as ices and sherbets. The handling of refrigeration machinery will be included in this course.

All those enrolled in this course should plan to stay over for the second week's work in ice cream making.

Course IV. Ice Cream Making for Experienced Men—(February 7—12)

This course is designed for those who have had actual experience in ice cream making and wish to secure a more thorough knowledge of their work.

Lectures and laboratory work will cover a study of various factors affecting efficient freezing operations, the effect of variations in composition and manufacture on quality of the finished product, etc. Round table discussions of new methods and recent experimental work, as well as individual problems will be included. Some specialists in the ice cream business and closely allied fields will speak before the group.

Information

For further information write to the Director of Short Courses or to Professor Julius H. Frandsen, Massachusetts State College, Amherst, Massachusetts.

SHORT COURSES FOR TREE WARDENS AND TOWN FORESTERS

March 14 to March 26, 1938

Description of Courses

Course A—Survey Course (March 14-19). For students not previously in attendance.

A course designed to be of use to town tree wardens, city foresters, and others whose major interest is the care of shade trees.

This course was first organized at the request of the Massachusetts Tree Wardens' Association and consists of lectures and field work. The program of the course will include (a) lectures and demonstrations in the care of shade trees, (b) recognition and control of shade tree insects, (c) recognition and control of shade tree diseases, (d) characteristics and properties of species desirable for use as shade trees. Field work and demonstrations will be conducted on the College campus where a great variety of shade tree species is available for study.

Course B—Advanced Course (March 21-26). For students previously in attendance, or in attendance at Survey Course, March, 1938.

This course is arranged to consider practical problems in connection with shade trees. The work of the course will supplement the basic information on shade tree care, insects, and diseases included in the survey course. The relation of public utility activities to shade trees will be studied. Time will be allotted for questions and discussions.

Registration

Students should fill in application blank in front of this bulletin, indicating whether applicant plans to attend the survey course, the advanced course, or both courses.

Tuition, Fees and Expenses

There is a tuition fee of two dollars and a registration fee of two dollars for each course; a total cost of $4.00 for each course.

Information

For further information write to the Director of Short Courses or to Professor Robert P. Holdsworth, Massachusetts State College, Amherst, Massachusetts.

APPLICATION FOR ENROLMENT IN THE TEN WEEKS' COURSE FOR GREENKEEPERS

January 3, to March 14, 1938

Date .....

Name .....

Home Address .....

Business Address .....

Age ..... Present Occupation .....

Previous Schooling .....

I hereby certify that the above applicant for the Winter School Course for Greenkeepers is either,—(1) a member of the green committee, (2) a greenkeeper, or (3) an employee of this club.

Signed .....
Greenkeeper

Signed .....
Chairman of the Green Committee

Mail this blank to Roland H. Verbeck, *Director of Short Courses,* Massachusetts State College, Amherst, Mass.

THE STOCKBRIDGE SCHOOL OF AGRICULTURE

A Two-Year Non-Degree Course in Vocational Agriculture

For twenty years the Massachusetts State College in addition to its degree courses has been conducting non-degree courses for students who wish to get fundamental training for some agricultural or related business. More and more, high school graduates, not otherwise prepared for college entrance, whose inclinations are towards the practical field of agriculture are finding the work of this department of the College well suited to their needs.

The work is divided into nine major programs—Animal Husbandry, Dairy Manufactures, Poultry, Floriculture, Fruit Growing, Ornamental Horticulture, Vegetable Gardening, Wildlife Management and Foods and Food Processing for hotel and retaurant operatives, one of which is selected by the student, depending on the job for which he wishes to secure training.

No entrance examinations are required. Minimum age seventeen years; minimum schooling eighth grade. Two hundred and fifty students were enrolled in 1936.

The first year consists of six months' study at the College and six months of required placement training, under the supervision of the College. During the placement period the student is expected to learn much of the practical side of his particular vocation. He is recommended to a position. These positions are on farms, in dairies, greenhouses, poultry plants. The nature of the position depends on the student's particular objective.

The second year consists of eight months' study at the College. On the completion of the course a diploma is granted. Tuition is $50.00 per semester to residents of the Commonwealth. Semester begins October 4, 1937.

For a complete catalog of the Stockbridge School of Agriculture, containing an application blank, write to Director Roland H. Verbeck, Massachusetts State College, Amherst, Mass.

Bulletin

MASSACHUSETTS STATE COLLEGE

Graduate School Number
1937-38

The Graduate School Catalogue for the sessions of 1937–38 is part of the Seventy-fourth Annual Report of Massachusetts State College and in conjunction with the general catalogue of the College it constitutes Part II of Public Document 31 (Sec. 8, Chapter 75, of the General Laws of Massachusetts.)

Amherst, Massachusetts

Volume XXIX November, 1937 Number 8

Published eight times a year by the Massachusetts State College, January, February, March, April, May, June, October, November. Entered at Post Office, Amherst, Mass. as second-class matter.

PUBLICATION OF THIS DOCUMENT APPROVED BY THE COMMISSION ON ADMINISTRATION AND FINANCE

1m. 11-'37. No. 2113.

CALENDAR

1938.

January 24-February 2, Monday to Wednesday	Final Examinations
February 2, Wednesday, 5:00 P.M.	First Semester ends
February 7, Monday, 8:00 A.M.	Second Semester begins
February 22, Tuesday	Holiday, Washington's Birthday
March 26-April 4, Saturday, 12 M.-Monday, 8:00 A.M.	Spring Recess
April 19, Tuesday	Holiday, Patriots' Day
May 30, Monday	Holiday, Memorial Day
June 1-10, Wednesday-Friday	Final Examinations
June 10, Friday	Second Semester closes
June 10-13, Friday-Monday	Commencement
September 14-16, Wednesday-Friday	Entrance Examinations.
September 19, Monday	First Semester begins for Freshmen
September 21, Wednesday, 2:00 P.M.	Opening Convocation
September 22, Thursday, 8:00 A.M.	All class schedules start
October 3, Monday	First Semester begins for Stockbridge School Freshmen
October 4, Tuesday	First Semester begins for Stockbridge School Seniors
October 12, Wednesday	Holiday, Columbus Day
November 11, Friday	Holiday, Armistice Day
November 23-28, Wednesday, 12 M.-Monday, 8:00 A.M.	Thanksgiving Recess
December 17-January 3, Saturday 12 M.-Tuesday, 8:00 A.M.	Christmas Recess.

1939.

January 23-February 1, Monday-Wednesday	Final Examinations
February 1, Wednesday, 5:00 P.M.	First Semester ends
February 6, Monday, 8:00 A.M.	Second Semester begins
February 22, Wednesday	Holiday, Washington's Birthday
April 1-10, Saturday, 12 M.-Monday, 8:00 A.M.	Spring Recess
April 19, Wednesday	Holiday, Patriots' Day
May 30, Tuesday	Holiday, Memorial Day
May 31-June 9, Wednesday-Friday	Final Examinations
June 9, Friday	Second Semester closes
June 2-5, Friday-Monday	Stockbridge Commencement
June 9-12, Friday-Monday	Commencement
June 15-17, Thursday-Saturday	Entrance Examinations

THE TRUSTEES OF THE COLLEGE

Organization of 1938.

Members of the Board.

	Term Expires
Mrs. Lena Edge Wilson of Pittsfield	1938
Harold L. Frost of Arlington	1938
David H. Buttrick of Arlington	1939
David J. Malcolm of Charlemont	1939
John F. Gannon of Pittsfield	1940
Davis R. Dewey of Cambridge	1940
Joseph W. Bartlett of Boston	1941
Philip F. Whitmore of Sunderland	1941
John Chandler of Sterling Junction	1942
Frederick D. Griggs of Pittsfield	1942
Nathaniel I. Bowditch of Framingham	1943
William C. Monahan of Framingham	1943
James T. Cassidy of Boston	1944
Mrs. Elizabeth L. McNamara of Cambridge	1944

Members Ex Officio

His Excellency Charles F. Hurley, *Governor of the Commonwealth.*
Hugh P. Baker, *President of the College.*
James G. Reardon, *Commissioner of Education.*
William Casey, *Commissioner of Agriculture.*

Officers of the Trustees.

His Excellency, The Governor, Charles F. Hurley of Boston, *President.*
Nathaniel I. Bowditch of Framingham, *Vice-President.*
Robert D. Hawley of Amherst, *Secretary.*
Fred C. Kenney of Amherst, *Treasurer.*

The Graduate School Staff.

Hugh P. Baker, *President of the College.*
Fred J. Sievers, *Director of the Graduate School.*
Dean of the College.
Heads of all Divisions.
Heads of Departments in which Graduate Courses are offered.
Professors, Associate Professors and Assistant Professors in charge of Graduate Courses.

The Graduate School Advisory Committee.

Fred J. Sievers, *Director of the Graduate School,* Chairman.
William L. Machmer, *Dean of the College.*
Leon A. Bradley, *Professor of Bacteriology.*
John B. Lentz, *Head of the Department of Veterinary Science.*
Charles A. Peters, *Professor of Inorganic and Soil Chemistry.*
Ralph A. Van Meter, *Head of the Division of Horticulture.*
Winthrop S. Welles, *Head of the Department of Education.*

GENERAL INFORMATION.

HISTORY.

Graduate courses leading to the degree of doctor of science were offered in botany under President Clark and in chemistry under Professor Goessmann as early as 1876. No candidate, however, completed the requirements for that degree. It was not until 1902, under President Henry H. Goodell, that courses leading to the degree of master of science were offered. This degree was first conferred in June, 1896, on two candidates. Graduate courses leading to the degree of doctor of philosophy were first offered in 1897, with chemistry, botany and entomology as major and minor subjects. The first degree was conferred on one candidate in June, 1902.

In the early years the graduate work was conducted under the direct administration of the President in conjunction with the four year courses. The demand for advanced work increased, however, and in June, 1908, the trustees made the Graduate School a separate unit in the College and appointed a director. Beginning with July 1, 1930, the responsibilities of the Graduate School were combined with those of the Agricultural Experiment Station. This arrangement is proving mutually beneficial by making the staff and equipment of the Experiment Station available for service in the Graduate School, and in turn providing an opportunity to utilize the services of graduate students in organized research projects.

LOCATION AND LANDS.

Massachusetts State College is located in Amherst, a town of about six thousand people, overlooking one of the most picturesque sections of the Connecticut Valley. From the standpoint of teaching material in the field of science and agriculture, the location is ideal. Amherst is eighty-eight miles from Boston, fifty miles from Worcester, twenty-five miles from Springfield, eighteen miles from Greenfield and eight miles from Northampton. Busses connect the town with Northampton, Greenfield, Holyoke and Springfield, or it can be reached direct over the Central Vermont Railroad. The campus consists of a tract of approximately seven hundred acres, lying about a mile north of the village center. The College is well provided with modern buildings and equipment, description of which may be found in the general catalogue.

PURPOSE AND SCOPE OF THE GRADUATE SCHOOL.

The purpose of the Graduate School is to provide qualified students with proper guidance in the methods of advanced study and research. Courses leading to the degree of doctor of philosophy, master of science, and master of landscape architecture are available. Students who desire advanced courses but who do not wish to become candidates for an advanced degree are also admitted.

Doctor of Philosophy.

Candidates for the degree of doctor of philosophy are required to pursue study in three subjects, one of which is designated as the major, and the others as minors. An original thesis is considered a part of the major subject. The degree is conferred upon graduate students who have met the following requirements:—

1. The devotion of at least three years to three subjects of study and research.
2. The earning of not less than ninety credits of which not less than sixty shall be in the chief or major subject, and not less than fifteen in each of two minor subjects.
3. The preparation of a satisfactory thesis.
4. The passing of final examinations, written and oral, in both the major and minor subjects.
5. The presentation of evidence of a working knowledge of both French and German.

6. The passing of a public oral examination.
7. The payment of all College fees and expenses.

It should be emphasized that the requirements for this degree are not computed primarily in terms of time and credits but that the degree is conferred only upon such students as have reached satisfactory attainment in some special branch of learning.

Master of Science.

Candidates for the degree of master of science are required to pursue study in two subjects, one of which is designated as major and the other as minor. When desirable and approved by the director, the minor may be made up of subjects from more than one department. An original thesis is considered a part of the major subject.

The degree is conferred upon graduate students who have met the following requirements:—

1. The devotion of at least one year to two subjects of study and research.
2. The earning of not less than thirty credits, of which approximately two thirds shall be in the major subject.
3. The preparation of a satisfactory thesis in the major subject.
4. The passing of final examinations, written and oral, in the major subject.
5. The payment of all College fees and expenses.

Master of Landscape Architecture.

Candidates for the degree of master of landscape architecture are expected to conform to the established courses as specified by the department of landscape architecture. The degree is conferred upon graduate students who have met the following requirements:—

1. Work covering at least three years, of which a minimum of one and one-half years must be devoted to study in residence, and a minimum of one year spent in practice outside of the College, specific requirements concerning the nature of such practice to be laid down by the department.
2. Submission of a complete written report on the work done in practice outside of the College.
3. Written approval from the employer as to the quality of service during the period devoted to practice outside of College.
4. Preparation of a satisfactory thesis.
5. The presentation of convincing evidence of genuine aptitude for some branch of landscape architecture as design, construction or management.
6. Completion of final examinations.
7. Payment of all College fees and expenses.

The degree of bachelor of landscape architecture may be earned upon the completion of one year of specialized work in that field. (See page 32.)

ADMISSION.

Admission to the Graduate School will be granted:—

1. To graduates of Massachusetts State College.
2. To graduates of other institutions of good standing who have received a bachelor's degree substantially equivalent to that conferred by this College.

ENROLLMENT FOR A DEGREE.

Admission to the Graduate School is not to be interpreted as implying admission to candidacy for an advanced degree in any given department. Such candidacy is subject to specific requirements laid down by the several departments, and the student must secure the approval of the head of the department in which he desires to major before he can become a candidate for a degree in that subject.

STUDY IN RESIDENCE.

It is understood that, in general, graduate credit will be granted only for courses pursued in residence, that is, in regularly approved courses conducted by a qualified member of the staff of Massachusetts State College.

Under certain conditions, and then only by special arrangement with the director of the graduate school, credit earned elsewhere will be accepted to apply on the requirements for the degree.

Non-Degree Enrollment.

Graduate work may be taken by students who are not candidates for a degree. Such enrollment permits the special privilege of a wider range in the selection of courses. The courses selected should, however, bear an appropriate relation to one another and be within the confines of the preparation of the student. A statement of the subjects chosen must, in each case, be submitted to the director of the Graduate School for approval.

Prerequisites.

In case an applicant has not completed in his undergraduate work as much of the subject he desires to select for his major study as is required of graduates of Massachusetts State College, he will be expected to pursue such undergraduate courses in that subject as the head of the department may consider necessary, without credit toward the advanced degree.

In the case of minor subjects for advanced degrees, credit begins to accrue from the point where the previous training of the applicant ended, whether it be graduate or undergraduate in its rating at this College—subject, however, to such limitations as may be fixed by the department concerned.

General Statement.

A working knowledge of French and German is considered important for successful graduate work in practically all the major lines, and is required for the doctor of philosophy degree. Students not offering modern language for admission will be given an opportunity to acquire same along with their graduate work.

The courses listed under departmental statements in the succeeding pages constitute the principal and characteristic work of the graduate student.

The College reserves the right to make changes in the requirements for degrees without notice.

COURSES OFFERED.

Doctor of Philosophy—Major Subjects.

Courses available as major subjects for the degree of doctor of philosophy:—

- Agricultural Economics and Farm Management
- Agronomy
- Bacteriology
- Botany
- Chemistry
- Economics
- Entomology
- Food Technology
- Pomology
- Poultry Science
- Sociology

Master of Science—Major Subjects

Courses available as major subjects for the degree of master of science:—

- Agricultural Economics and Farm Management
- Animal Husbandry
- Agronomy
- Bacteriology
- Botany
- Chemistry
- Dairy Industry
- Economics
- Education
- Entomology
- Floriculture
- Home Economics
- Horticultural Manufactures
- Olericulture
- Pomology
- Poultry Science
- Psychology
- Sociology

Master of Landscape Architecture

Courses available for the degree of master of landscape architecture:—

- Landscape Architecture

Minor Subjects.

Courses available as minor subjects:—

Agricultural Economics and Farm Management
Agronomy
Animal Husbandry
Bacteriology
Botany
Chemistry
Dairy Industry
Economics
Education
English
Entomology
Floriculture
Forestry
French
Geology
German
History
Home Economics
Horticultural Manufactures
Landscape Architecture
Mathematics
Olericulture
Philosophy
Physical Education
Physics
Physiology
Pomology
Poultry Science
Psychology
Sociology
Veterinary Science
Zoölogy

Theses.

A thesis is required of each candidate for an advanced degree. It must be on a topic belonging to the candidate's major subject, and must indicate that its writer possesses the ability and imagination necessary to carry on independent, constructive thinking. The following rules should be adhered to in the preparation and presentation of a thesis:—

1. The objective of a thesis should be an attempt to make a real contribution to knowledge and practice. When completed it should be of a quality worthy of publication as a contribution from the department concerned.

2. The thesis, in its completed form, will be judged largely upon the ability of the author to review literature and reach definite deductions; to formulate a problem, plan a method of attack, and work out a solution; and to summarize his material and draw conclusions. Scholastic attainment in writing and presenting the results of the study will also be an important factor in the evaluation. No thesis markedly poor in its English will be accepted.

3. After the student, in consultation with his major adviser (head of the department in which the student selects his major), decides upon a thesis subject, he is required to submit an outline to the director of the Graduate School. The director, with this as a basis, selects from the graduate staff a thesis committee to which the student then submits the outline for approval. This committee will, thereafter, have direct charge of all matters pertaining to said thesis, and it is recommended that the student use the advice available from this source in the progress of his research. The thesis must have the approval of this committee before arrangements are made for the final examination for the degree.

4. Three complete, bound copies of the thesis, including drawings and any other accessories, are required by the graduate school office in order that the files in the director's office, the College library and the department in which the thesis was prepared may be supplied.

5. If the thesis is printed, whether in periodical or book form, the fact that it is a thesis submitted for an advanced degree at Massachusetts State College shall be explicitly stated in the title itself or as a footnote on the front page. Such modifications as may be deemed necessary for publication shall have the approval of the director.

6. Because of the time required to give adequate consideration to the research conducted by the student, it is highly desirable that theses be submitted to the committee, in the case of doctors' theses, not later than March 15, and in the case of masters' theses, not later than May 15 of the academic year in which the degrees are to be conferred. The theses in their final form shall be deposited with the director by June 1.

7. If typwriten, whether designed for publication or to remain in the typewritten form, the size of the sheet, the arrangement of the title page, the general structure of the thesis, the character of the paper, and the binding must conform to definite standards.

A. *Size of sheet.* Size of sheet must measure 8½ x 11 inches.

B. *Form of title page.* The title page must be arranged in this order:—
   a. Subject.
   b. Name of author.
   c. "Thesis submitted for degree of—".
   d. "Massachusetts State College, Amherst."
   e. Date.

   and should be distributed over the page as artistically as possible.

C. Following the title page, the arrangement may take such form, variable of course with the subject matter, as is illustrated below:—
   a. An analytical outline of thesis.
   b. An introductory statement in which the purposes of the author are set forth.
   c. The body of the thesis composed of literature critically reviewed and deductions made, formulation of method of attack or procedure, and results secured. (All literature reviews and any work done by others should be so separated that no question can be raised as to which portion of the thesis represents the original investigation. It should be clearly kept in mind that *compilation* is not considered original investigation.)
   d. Summary and conclusions.
   e. Bibliography. (This should have the approval of the chairman of the thesis committee before final arrangement.)
   f. Acknowledgments.
   g. Statement of approval signed by members of the thesis committee.

D. *Paper.* See sample in College store.

E. *Binding.* See sample of binding in director's office.

8. All theses are the property of the College and subject to the will of the director of the Graduate School.

FINAL EXAMINATIONS.

For the degree of doctor of philosophy final examinations on the minors are given upon the completion of the subjects. In the major subject, a written examination, if successfully passed, is followed by an oral examination in the presence of the graduate staff.

For the degree of master of science, or master of landscape architecture, a final examination in the major subject, which may be written or oral, or both, is given by the department concerned.

ESTIMATE OF EXPENSES.

A charge of $50 per semester, payable in advance, which covers tuition, laboratory and student health fees, is imposed on students who are residents of Massachusetts. For residents of other states or foreign countries, this charge is $110 per semester. In cases where students carry less than a full schedule of courses, a special tuition rate is provided. For purposes of definition, all students claiming residence in the State shall at time of admission provide the treasurer's office with an official statement from their town or city clerk as evidence. Also, the student must present evidence of successful vaccination.

Board should not be in excess of $9 per week, with a minimum of about $6. Rooms for graduate students are not available in the College dormitories, but can be rented in private homes at from $15 to $20 per month. The costs of books and incidentals should not exceed $100 per year.

ASSISTANTSHIPS.

Through a fund set aside for that purpose, the College offers a number of graduate assistantships to students. The value of these is limited to $600 per year, and appointment is made for a one-year period. These appointments are especially suited to students who desire to gain teaching experience and make themselves at least partly self-supporting while continuing their education. It should be recognized, however, that, in cases where students render this part-time service in return for the financial assistance extended, the residence time requirements for the degree in question are necessarily longer. Application for appointment to any assistantships should be made to the director of the Graduate School.

FELLOWSHIPS.

The Agricultural Experiment Station in its program of investigation frequently finds it desirable to utilize the services of graduate students qualified to do certain types of technical work required in connection with its several research projects. Funds are available for this purpose and qualified students may be elected to such fellowships. Not infrequently this arrangement affords an opportunity for the student to satisfy his thesis requirement by completing some unit of work within a larger project organized in the research program of the Experiment Station.

In recent years industrial concerns have been rather anxious to have certain investigations undertaken for them by the Experiment Station. For this service they are willing to lend financial support, and in deserving cases it has proven very desirable to accept and utilize these funds for fellowship purposes. At present several fellowships are supported on this basis. These are proving very satisfactory from the standpoint both of the student and the industry supporting the investigation.

GRADUATE COURSES DURING THE SUMMER.

The College offers oportunities to pursue graduate courses during the summer in connection with the regular Summer School. While provision may be made for special study with several departments during the summer period, the scheduled courses are offered primarily for teachers who seek advanced work in education and closely related subjects for purposes of better preparing themselves for more effective service in the teaching profession. Details regarding courses offered, facilities for study, environment, etc., may be found in the Summer School catalogue, a copy of which is available upon request to the director of Short Courses.

DESCRIPTION OF COURSES

Agricultural Economics and Farm Management.

COURSES FOR MAJOR OR MINOR CREDIT.

126. Economics of Agricultural Production. Credit, 3.
Professor Barrett.

155. Marketing Farm Products. Credit, 3.
Professor Lindsey.

156. Fundamentals of Cooperation. Credit, 3.
Professor Lindsey.

157. Agricultural Credit and Land Appraisal. Credit, 3.
Professor Lindsey.

165. Farm Account Analysis. Credit, 3.
Professor Branch.

167. Market Problems and Market Price Policies. Credit, 3.
Assistant Professor Brown.

168. Agricultural Policy. Credit, 3.
Professor Westcott.

170. Agricultural Economic Theory. Credit, 3.
Professor Lindsey.

175. Farm Organization. Credit, 3.
Professor Barrett.

176. Farm Operation and Advance Farm Organization. Credit, 3.
Professor Barrett.

179. Principles and Methods of Statistics. Credit, 3.
Professor Lindsey.

180. Advanced Statistics. Credit, 3.
Professor Lindsey.

182. Advanced Farm Operation. Credit, 3.
Professor Barrett.

184. Research Methods and Procedure. Credit, 3.
Assistant Research Professor Creek.

190. Seminar. Each Semester, Credit, 1-3.
The Department.

200. Thesis.
The Department.

Agronomy.

COURSES FOR MAJOR OR MINOR CREDIT.

105. Soil Types of Massachusetts.—Lectures and field travel. Credit, 1.

110. Studies in the Culture of Field Crops.—Laboratory, field, or other problems concerning the tillage of field crops. Credit, 3.

115. The Fertilization of Field Crops. Credit, 3.

125. The Improvement of Field Crops.—Readings, discussions, laboratory or field work in the improvement of field crops by breeding and selection. Credit, 3.

135. Nutrition of Field Crops.—Readings, laboratory and greenhouse work on problems of nutrition. Credit, 3.

136. Grasses.—Studies in the history, distribution, characteristics, commercial uses, and nutrition of grasses. Credit, 3.

137. Fine Turf Culture.—Laboratory and field studies in the establishment and culture of turf grasses. Credit, 3.

145. Studies in Soil Physics.—Problems concerning texture, structure, and other physical properties of soils. Credit, 3.

155. Studies in Soil Management.—Study of a wide range of problems arising in the management of soils for crop production. Credit, 3.

160. Soil Technology.—Includes studies of properties, behavior, and technical utilization of soils. Credit, 3.

163. Chemistry of the Soil.—Includes chemical studies of availability of nutrients, base-exchange studies, etc. Credit, 4.

170. Studies of Soil Fertility.—Investigation of the factors and conditions affecting the productivity of soils. Credit, 3.

175. Organic Matter of the Soil.—Includes studies of the origin, properties and methods of maintenance of soil organic matter, and its physical and biochemical relations to soil fertility. Credit, 3.

185. Fertilizers and the Soil.—Concerning the interrelationships of soils and fertilizers when mixed. Credit, 3.

190. Studies in Literature.—Practice in preparing abstracts and summaries of the literature bearing on selected topics. Credit, 2.

200. Thesis.—For students taking major work in Agronomy. Credit, 10-30.

Animal Husbandry.

COURSES FOR MAJOR OR MINOR CREDIT.

110. Nutrition of Farm Animals.—A course dealing with the chemistry and physiology of the digestion, absorption and utilization of feeds. The major portion of the course consists of a study of the literature concerning the phases of nutrition that are of the greatest interest and value to the individual student. Credit, 5.

120. Genetics of Farm Animals.—A course dealing with the inheritance of characteristics in the larger farm animals. The work may be based upon herd book and advanced registry data or it may be of an experimental nature with either small laboratory animals or with the larger farm animals. The student will be expected to make a thorough review and analysis of available data in the field of his choice. Credit, 5.

130. Problems in Livestock Production.—This course will deal with some specific problem in feeding, management, or production of some specific livestock product such as milk, wool, meat, etc. Assistance will be given in outlining the problem and setting up the experimental procedure and the student will be held responsible for collecting and analyzing the data. Credit, 5.

200. Thesis.—Research work in animal husbandry may consist of historical studies of modern breeds of livestock or experimental studies in animal nutrition or genetics. Credit, 10.

COURSES FOR MINOR CREDIT ONLY.

50. The Nutrition of Farm Animals.—This course is designed to give the student an understanding of the mechanics of digestion, absorption, circulation, respiration and excretion; the functions of proteins, carbohydrates, fats, vitamins, and minerals in body metabolism; the functions of those endocrine glands primarily concerned with nutrition; the nature and value of the various feed stuffs; and methods of calculating rations in order to meet the requirements of various classes of livestock.
2 class hours. 1 2-hour laboratory period, credit, 3.

51. The Breeding and Improvement of Farm Animals.—This course is planned to acquaint the student with the facts of reproductive physiology, with the facts and theories of modern genetics, and to show how such knowledge may be utilized for the creation of more beautiful and more efficient animal types.
2 class hours. 1 2-hour laboratory period, credit, 3.

52. Advanced Meat Studies.—This course is designed to impart a knowledge of the fundamental principles involved in buying and efficiently utilizing meat and meat products. One laboratory per week will be devoted to actual practice and observation in nearby packing plants.
2 2-hour laboratory periods, credit, 2.

53. Beef and Sheep Production.—This course includes studies of the development of the beef and sheep industries, situation and outlook, phases of production, systems of management, herd and flock improvement, feeding management, breeding and equipment. During April and May trips are taken to the

leading herds and flocks in New England, thus affording an opportunity for comparisons which will serve in evaluating quality characteristics.
2 class hours. 1 4-hour laboratory period, credit, 4.

75. Horse and Swine Production.—This course includes a study of the development of the breeds of draft and light horses and of swine, and a study of the economic, genetic, nutritional and managerial problems concerned in producing these classes of livestock with particular reference to New England conditions.
2 class hours. 1 4-hour laboratory period, credit, 4.

77. Dairy Cattle and Milk Production.—This course embraces all phases of dairy cattle production and management. It affords an opportunity to seek the solution to the economic, nutritional, genetic and managerial problems concerned in sunccessful dairying. One period per week will be devoted to talks by specialists in the various fields. 4 2-hour laboratory periods, credit, 4.

81. Animal Husbandry Seminar.—Students will prepare original papers and talks on various pertinent topics. Round table discussions of animal husbandry investigational work and practices will be conducted.
1 2-hour laboratory period, credit, 1.

Bacteriology and Physiology.

COURSES FOR MAJOR OR MINOR CREDIT.

100. History of Bacteriology.—Studies in the development of bacteriology from the late seventeenth century to the present time, especially planned to show the developments of bacteriology in relation to agriculture, public health, the arts, industry, and medicine. Credit, 3.

120. Physiology of Bacteria.—Lectures and laboratory on the nature of the bacterial cell and on nutrition and metabolism with emphasis on certain fundamental aspects of physiological processes and activities. Designed for students specializing in bacteriology and open to others who have sufficient chemistry, general biology, and botany. Credit, 5.

130. Soil Bacteriology.—Accurate applications of microchemical methods are demonstrated. Biochemical and biophysical methods for measuring the physiological activities of soil microörganisms are studied. Nitrification, denitrification, and ammonification will be discussed in relation to their influence on soil fertility. Credit, 5.

140. Dairy Bacteriology.—Technical procedures used in establishing sanitation in relation to milk production and supply will be discussed. Modern methods involved in the preparation, control, and preservation of milk and dairy products are studied. Credit, 5.

150. Food Bacteriology.—This course deals with some of the laboratory problems originating in the field of Food Technology, class discussions on collateral reading, demonstrations and advanced laboratory procedures. The laboratory work includes a study of (1) the effect of foods and methods of feeding upon the normal bacteriological flora of the intestine; (2) systematic studies of special groups and bacteria involved in the preparation and in the spoilage of foods. Credit, 5.

160. Hygienic Bacteriology.—Special consideration given to organization of disease control campaigns, laboratory management, the relationship of serology, immunology, and bacteriology to municipal, rural, and community health. Bacteriological, immunological, and serological procedures will be presented, and there will be discussion of problems showing their use for improving the condition and environment for human and animal life. Credit, 5.

170. Physiology, Human or Animal.—Study of the physiology of the circulation with special reference to intermediate metabolism; to be followed by a course on the physiology of excretion. This course in physiology may be considered from the standpoint of human or animal physiology, according as the student may elect. Credit, 6.

190. Lectures and Study of Literature. Credit, 1 each semester.

200. THESIS.—Some bacteriological problem related to agriculture, food, or public health. Distributed as may be most beneficial for research work. Time and credit by arrangement. Credit, 10-30.

COURSES FOR MINOR CREDIT ONLY.

Bacteriology.

31. INTRODUCTORY AND GENERAL BACTERIOLOGY.—Designed to make microorganisms real and significant. The laboratory covers the use and proper care of the compound microscope, the preparation of culture media, methods of sterilizing equipment, the isolation and handling of pure cultures, simple and differential staining, studies on classification and cultural and biochemical studies on type species of pathogenic and non-pathogenic bacteria. Individual practice in the isolation and identification of bacterial forms is a required part of the laboratory assignment. The course aims to provide a basis for bacteriological study and interpretation and to furnish such material as will be valuable in understanding agriculture, domestic science, and public health problems.
2 3-hour laboratory periods, credit, 3.

52. ADVANCED BACTERIOLOGY.—A continuation of Course 31. The identification and differentiation of bacterial species by morphological, cultural, physiological and serological studies. The combined courses give to the student not only a comprehensive picture of various forms of existing bacteria but develop a specialized technique for their cultivation, isolation, and identification.
Prerequisite, Bacteriology 31. 2 3-hour laboratory periods, credit, 3.

61. BACTERIOLOGY. (PUBLIC HEALTH.)—Considers the relation of the human body to its environment in the maintenance of health and the production of disease. The administration and organization of community health, the prevention or control of animal or human diseases of public health significance, are considered. A study of special community health problems and the relationship of these problems to social welfare is discussed. 2 class hours, credit, 2.

62. BACTERIOLOGY. (PUBLIC HEALTH.)—Sanitation and its relation to agriculture, industry and public health. The microbiological features of air, water, soil, sewage, and refuse; industrial hygiene and the control of municipal and rural sanitary projects are considered.
Prerequisite, Bacteriology 31 or 61. 2 class hours, credit, 2.

81. APPLIED BACTERIOLOGY.—This course covering a full year's work is designed to give the student a working knowledge of present day applied bacteriology. The work in the laboratory is presented in three distinct sections: (1) soil, (2) food, (3) dairy. In soil, such subjects as the number and development of microörganisms in different soils, factors influencing their growth and activity, and changes wrought upon matter in the production of soil fertility, ammonification, nitrification, etc., receive attention. In food, a study of preservation, fermentation, spoilage, and methods of sanitary examination are considered. In dairy, emphasis is placed upon modern methods for examining the sanitary quality of milk and milk products. Groups of bacteria normally present, abnormal and normal fermentation, effect of temperature, and the rôle of milk in the transmission of disease, are some of the subjects receiving special consideration.
Prerequisite, Bacteriology 52.
2 3-hour laboratory periods, credit, 3 each semester.

85. BACTERIOLOGY. (SEROLOGY.)—This course aims to supplement Bacteriology 52 and is planned to complete work essential for the advanced study in bacteriology and physiological science. This course includes the study, preparation, and standardization of such biological products as antigens, agglutinins, precipitins, hemolysins and complement-fixation bodies, and the use of the same in differential bacteriology and disease diagnosis. Consideration is also given to isohemagglutins and their relation to human blood groups. Class limited to ten students.
Prerequisite, Bacteriology 52. 2 3-hour laboratory periods, credit, 3.

Physiology.

75. PHYSIOLOGY.—The object of this course is to establish a broad basis for physiological study. The study and use of instruments is emphasized. The correlation of physics, chemistry and biological science to the interepretation of functional activities is particularly considered. Aspects of nerve-muscle physiology, hemodynamics, alimentation, intermediate metabolism, and the general plan and structure of the body pertaining to each division of the work will be considered.

2 class hours. 1 2-hour laboratory period, credit, 3.

76. PHYSIOLOGY.—Physiology of internal and external respiration including studies on calorimetry and basal metabolism. This will be followed by work upon the physiology of excretion. An introduction to the physiology of the special senses will be presented. This course is especially planned for students with a broad training in biological subjects.

2 class hours. 1 2-hour laboratory period, credit, 3.

Prerequisite, Physiology 75.

Botany.

COURSES FOR MAJOR OR MINOR CREDIT.

100. PLANT PHYSIOLOGY.—The lectures will consider, under the nutrition of the plant: its chemical structure, absorption of various nutrient substances and their changes in the plant, assimilation and dissimilation of carbon and nitrogen by autotrophic and heterotrophic plants; under changes in the form of plants: growth and form under constant external factors, the influence of variable external and inner factors on growth, form, and development; and under plant movements: the various tropisms, mutations, etc. Supplemental demonstrations, laboratory work and reading.

1 class hour. Credit, 1 each semester.

101. PLANT PATHOLOGY.—A general consideration of the history, nature, and causes of plant disease; parasitism, predisposition, immunity, degeneration, natural and artificial infection, dissemination, epidemics, biologic strains, monstrosities and malformations, proliferation, prevention and control, economics of plant diseases. Supplemental reading and reports.

1 class hour. Credit, 1 each semester.

102. PLANT INHERITANCE.—This course is planned to give the student a comprehensive understanding of the principles and facts of plant inheritance. A study is made of plant variations, Mendel's law of heredity, the physical basis of heredity as established by chromosome behavior, pure lines mutations, species, graft hybrids, etc.

1 class hour. Credit, 1.

103. BIOLOGIC RELATIONS.—Consideration of certain phases of the morphological and physiological adaptations of plants with regard to insect visits; the rôle of thorns, hairs, tendrils, glands, etc.

1 class hour. Credit, 1.

105. PHYSIOLOGICAL PLANT PATHOLOGY.—This course considers those plant diseases not due to bacterial or fungous parasites, but resulting from unfavorable physical or chemical conditions of the soil; from harmful atmospheric influences, such as dry air, excessive moisture, hail, wind, lightning, frost; from injurious gases and liquids; from lack of or too much light; from wounds. A knowledge of the normal physiology of the plant is required. Demonstrations and assigned readings.

1 class hour. Credit, 1.

106. HISTORY OF BOTANY.—An historical survey of the science; lives of noted botanists; history of certain culture plants, such as wheat, corn, coffee, potato, rice, and their influence on civilization; reading. By arrangement. Credit, 2.

107. METHODS IN DRAWING AND PHOTOGRAPHING FOR THESIS AND PUBLICATION. Credit, 1-2.

110. Systematic Mycology.—Morphology and development of typical species representing the orders and families of fungi; practice in identification, collection and preservation of fungi; systems of classification; collateral reading. 1 class hour.

2 2-hour laboratory periods, one, or two semesters. Credit, 3 each semester.

111. Advanced Plant Physiology.—The work offered in this course is arranged to meet individual needs. Botany 77 or its equivalent are prerequisite. Credit, 5.

112. Advanced Plant Pathology.—The work offered in this course is arranged to meet individual needs. Botany 75 or its equivalent are prerequisite. Credit, 5.

190. Collateral Reading.—Extensive reading of botanical literature in English, German and French, designed to give the student a broad knowledge of the science, is required of all major students. Final examinations are based in part upon this reading course. Credit, 5.

200. Thesis.—Each major student is required to select a problem in plant pathology or physiology (in other branches at the discretion of the department) for original investigation, and the thesis must embody a distinct contribution to knowledge. The thesis work counts for not more than 35 per cent of the total number of major credits required for either degree.

COURSES PRIMARILY FOR MINOR CREDIT.

57. Microtechnique.—A course in the preparation of microscopic mounts including the celloidin and paraffin methods and involving the use of microtomes and of differential stains. 2 2-hour laboratory periods. Credit, 2.

59. Systematic Botany of the Higher Plants.—Study of gymnosperms and angiosperms. Lectures deal with the interrelations of the flowering plants and with their ecology, distribution, and economic importance. Laboratory work consists of a critical study of types from the most important natural plant families. Particular emphasis is laid on the flora of Massachusetts. The department herbarium and greenhouses supply material of important tropical forms for study.
2 class hours. 1 2-hour laboratory period. Credit, 3 each semester.

61. The Comparative Anatomy of Green Plants.—In the lectures study is directed to the comparative anatomy of green plants from the evolutionary standpoint. Particular emphasis is laid upon the woody forms both living and extinct. Of the latter, the department is fortunate in possessing excellent sets of micro-preparations and lantern slides.
2 class hours. 1 2-hour laboratory period. Credit, 3 each semester.

75. Plant Pathology.—Comprehensive study of diseases of plants; training in laboratory methods and technique, including culture work and artificial inoculation of hosts; miscellaneous diagnosis; study of literature and representative life histories of pathogens. Prepares for civil service, experiment station, and college work.
1 class hour. 3 2-hour laboratory periods. Credit, 4 each semester.

77. Plant Physiology.—Study of the factors and conditions of (a) plant nutrition, including the taking up of water and mineral substances, the assimilation of carbon and nitrogen, and the release of energy due to the processes of dissimilation; (b) plant growth, including the influence of internal and external factors on growth, the development of reproductive and vegetable organs; (c) plant movements, including those due to the taking up of water, and those of both motile and fixed forms in response to external stimuli. Weekly conferences are held, at which students report on assignments to original sources in the literature.
2 class hours. 2 2-hour laboratory periods. Credit, 4 each semester.

81. Plant Ecology.—Study of plants in relation to their environment, with special emphasis on the newer field studies, which have given increasing insight into the physical and chemical factors as they influence growth and development

in the field and the adaptability of plants to changes in their normal environment. The various types of plant formations and successions are studied, as well as the mutual and antagonistic relations of certain plants.
1 class hour. 2 2-hour laboratory period. Credit, 3.

Chemistry.

COURSES FOR MAJOR OR MINOR CREDIT.

101. Inorganic Preparations.—Laboratory. The preparation of chemical products from raw materials. The manufacture and testing of pure chemicals. The laboratory work is essentially synthetic in nature, and is designed to aid in acquiring a more adequate knowledge of inorganic chemistry than is to be obtained by chemical analysis alone. Either semester. Credit, 5.
Associate Professor Serex.

102. Electrolytic Analysis.—Laboratory. This course includes the separation and determination of some of the common metals such as copper, silver, nickel, lead, cadmium and zinc. Some work on electrometric analysis may also be included such as the titration of iron with dichromate or iron with ceric sulfate and use of the hydrogen, quinhydrone and glass electrodes.
Either semester. Credit, 5.
Assistant Professor Fessenden.

103. Advanced Analytical Chemistry.—This course consists of special work to meet the needs of the individual student. It may consist of ultimate analysis, micro-analysis, or analysis of definite classes of materials such as foods, fertilizers or insecticides.
Either semester. Credit, 3 or 5.
Professor Peters.

104. Advanced Physical Chemistry.—Laboratory. Measurement of the electrical conductivity of solutions; degree of ionization; ionization constants; per cent hydrolysis of aniline hydrochloride from conductivity measurements; solubility product by the conductivity method; velocity of saponification by conductivity; neutralization point by conductivity; vapor pressure determinations; transport numbers; preparation and properties of colloidal solutions; transition points by dilatometric method; heat of solution of ammonium chloride and potassium nitrate; absorption of iodine by charcoal; determination of hydrogen ion concentration. To each student separate work will be assigned.
Either semester. Credit, 5.
Associate Professor Serex.

105. Advanced Organic Chemistry.—Laboratory. The preparation of compounds not included in courses 51 and 52, such as the Kolbe synthesis of salicylic acid; the synthesis of camphor and of indigo; the preparation of medicinal compounds, e.g., acetanilide, phenacetin and barbituric acids; the preparation of dyes, e.g., rosaniline, malachite green, congo red; the study of the Grignard reaction, etc. To each student separate work will be assigned.
Either semester. Credit, 5.
Professor Chamberlain.

106. Advanced Biological Chemistry.—Laboratory. An intensive study of special compounds, or processes, involved in the growth or metabolism of either plants or animals, under either normal or pathological conditions. To each student separate work will be assigned. Either semester. Credit, 5.
Professor Ritchie.

107. Advanced Inorganic Chemistry.—Lectures and collateral reading. A survey of the fundamental principles of chemistry and a discussion of the descriptive chemistry of the elements based on the periodic table. Attention will be given to some of the less common elements.
Second semester. 1937-38. Credit, 3.
Assistant Professor Fessenden.

108. Advanced Analytical Chemistry.—Lectures on iodine as used in analysis, the stability of thiosulfate; the colors with starch; the preparation of arsenic for a standard; the limitations of the dichromate standard; the errors in the reduction of arsenates; the manifold uses of the iodide-iodate reaction; typical processes; micro-methods.
First semester, 1938-39. Credit, 3.
Professor Peters.

109. Advanced Physical Chemistry.—Selected topics in physical chemistry. A brief survey of the fundamental theories and recent advances in radioactivity, induced radioactivity, colloidal chemistry and catalysis.
Second semester, 1938-39. Credit, 3.
Associate Professor Serex.

110. Advanced Organic Chemistry.—The lectures will vary with alternate year periods, but, in general, will include a review of the field of organic chemistry along with special topics such as, hydrogenation, hydrolysis, diazotization, esterification, oxidation and reduction, etc., essential oils, perfumes and dyes.
Credit, 5.
Professor Chamberlain.

111. Biocolloids.—An introduction to the principles of surface chemistry that apply to colloid systems. Major consideration given to the emulsions and hydrophillic systems encountered in fields of applied biology. Collateral reading and preparation of literature reviews in the student's special field necessary.
Second semester, 1937-38. Credit, 3.
Professor Freeman.

112. Chemical Thermodynamics.—A study of the application of thermodynamics to chemical problems.
Second semester. To be given in 1937 and alternate years. Credit, 2.
Assistant Professor Fessenden.

114. Seminar.—Conferences, reports, or lectures.
Each semester. Credit, 1.
Professor Ritchie.

175, 176. Physical Chemistry.—Lectures and laboratory work.
A year course. Credit, 3 each semester.
Associate Professor Serex.

179. Physiological Chemistry.—Lectures and laboratory work. First semester. Credit, 4.
Professor Freeman.

186. Theoretical Chemistry.—Two class hours. Second semester.
Credit, 2.
Professor Peters.

188. History of Chemistry.—Second semester.
Two class hours. Credit, 2.
Professor Ritchie.

192. Special Investigations.—A continuation of Course 92, II, for graduate students majoring in chemistry. The student will have the opportunity to continue studying the methods of research. Problems of definite character will be assigned to the student in the various fields of chemistry. It will be necessary for the student to report on pertinent literature. Both semesters. Credit determined by work done.
The Department.

200. Thesis.—Research, and in the case of a degree, the preparation of an acceptable thesis in agricultural, analytical, organic, physiological, or physical chemistry, under the direction of the professor in charge of the work. Credit determined by work done.
The Department.

COURSES FOR MINOR CREDIT ONLY.

51, 52. Organic Chemistry.—Lectures and laboratory work. A year course. 4 credits each semester. Professor Chamberlain.

61, 62. Quantitative Analysis.—Lectures and laboratory work. A year course. 4 credits each semester. Professor Peters.

Dairy Industry.

The Department of Dairy Industry is housed in its own building, generally known as Flint Laboratory. This building is equipped with modern machinery for the production of market milk, ice cream, butter, and cheese. It has ample laboratory facilities for the carrying on of the various lines of research work of interest to students in dairy industry.

COURSES FOR MAJOR OR MINOR CREDIT.

101. History and Development of Dairying.—A review of the early history of dairying and factors in the industry contributing to its present development. Credit, 3.

102. Ice Cream Problems.—A study of existing scientific, technical, and marketing problems in the field of ice cream making. Credit, 3.

103. Market Milk Problems.—Consideration of production, processing, and distribution of milk, the nutritional value of milk, chemical and bacteriological aspects of milk handling. Credit, 3.

104. Surplus Milk Problems.—The economical disposal of seasonal surpluses through cheeses, butter, milk drinks, etc. Credit, 4.

105. Dairy Plant Management.—The selection, construction, and arrangement of dairies and dairy machinery, and economical operation of same. Credit, 3.

195. Seminar. Credit, 1 each semester.

200. Thesis.—Original research work having a bearing on some important problem in dairying. Credit, 10.

COURSES FOR MINOR CREDIT ONLY.

52. Market Milk.—A study of the various phases of the market milk industry: sanitary production, transportation, pasteurization and handling in the city plant, marketing, delivery systems, milk and its relation to public health, inspection, milk laws, food value, and advertising. Cultured milk and other milk drinks also are included. Some milk plants are visited. Credit, 4.

75. Dairy Chemistry.—The various physical and chemical properties of milk, milk products, and their components are studied. Testing and control methods commonly used commercially for milk and dairy products are included; moisture and fat determinations, casein, salt, and acid tests, work with the Mojonnier apparatus, and other applied chemical tests are taken up in the laboratory. Credit, 3.

77. Butter and Cheese Making.—The first half of the semester is devoted to butter making, the remainder to cheese making, condensed and powdered milks. The various phases of the butter industry studied are: separators and cream separation; pasteurization, neutralization, and ripening of cream, preparation of starter cultures; churning, marketing, and scoring of butter; creamery management. The work in cheese making includes cheddar, cream, Neufchatel, cottage, processed cheeses, etc. The manufacture of condensed and powdered milk, and commercial casein is also covered. Credit, 5.

78. Ice Cream Making.—The course includes a study of the principles and practices of ice cream making. The effects of such factors as composition, quality, pasteurization, homogenization, aging, and freezing on the finished product are considered. Sherbets, ices, fancy and individual forms, and all flavors of ice cream are studied. Some time is devoted to refrigeration machinery, delivery equipment, and merchandising methods as they are related to the industry. Credit, 4.

79. SEMINAR.—The course consists of a study of research done by the experiment stations, also a review of foreign literature. Students prepare papers on timely dairy subjects. Frequent addresses are made to the class by visiting authorities in dairying. Credit, 1 each semester.

Economics.

COURSES FOR MAJOR OR MINOR CREDIT.

110. ADVANCED ECONOMIC THEORY.—A study of the classical and nonclassical theories of value and distribution. Analysis of fundamental concepts and the relation of these to current problems of production, distribution and exchange. Credit, 3

Assistant Professor GAMBLE.

111. HISTORY OF ECONOMIC THOUGHT.—A general study of the development of economic thought from its ancient beginnings; the contributions of the various schools; recent changes in economic history. Credit, 3 each semester.

Research Professor ROZMAN.

112. BUSINESS FLUCTUATIONS.—A study of business fluctuations and an analysis of the current business cycle theories. Credit, 3.

Assistant Professor GAMBLE.

113. CENTRAL BANKING.—A study of the organization and policies of the major central banks with special reference to the Federal Reserve System. Credit, 3.

Assistant Professor GAMBLE.

114. PUBLIC FINANCE.—A study of the principles underlying public expenditures, public borrowing and taxation. Credit, 3.

Assistant Professor GAMBLE.

115. CURRENT ECONOMIC PROBLEMS AND LITERATURE.—Department seminar throughout the year. Credit, 1-3 each semester.

125. APPLIED ECONOMICS.—A course offered primarily for high school teachers (others may elect), which is intended to appraise such current economic questions as the business cycle, taxation, banking, international trade reparations, economic planning, and similar problems in the light of economic principles. Credit, 3 each semester.

Assistant Professor GAMBLE.

131. PROBLEMS OF PRODUCTION.—A presentation of the industrial relationships and the principles upon which the production of economic goods is based. Credit, 3-5.

Professor CANCE.

140. PRINCIPLES AND PROBLEMS OF LAND ECONOMICS.—This course deals principally with the characteristics and classification of land, present and future uses of land, private property and the control over property, land income and the value of land. Credit, 3.

Research Professor ROZMAN.

145. LABOR PROBLEMS.—Reading and investigation. By arrangement. Credit, 3.

Assistant Professor GAMBLE.

155. MARKETING AND MARKETING PROBLEMS.—A study of the forces and conditions which determine prices and the mechanism, methods, and problems concerned with transportation, storing and distributing goods. Credit, 3.

Professor CANCE.

160. PUBLIC UTILITIES AND THEIR REGULATION.—The study will include the problem of social control of monopolies and industries affected with a public interest. Credit, 3.

The DEPARTMENT.

161. PUBLIC ADMINISTRATION.—A general survey of the field, the principles and the relationships of public administration. Credit, 3.

Assistant Professor ROHR.

166. Principles of Transportation.—The development of highway, waterway, and railway transportation, and its relation to the development of the country; the principles governing the operation and control of transportation agencies; present-day problems. Lectures, text, and field work. Credit, 3.
Professor Cance.

167. Specific Transportation Problems.—Original study, reading, and reports on certain transportation problems related to agriculture. Alternate years, odd. Credit, 3-5.
Professor Cance.

170. The Fundamentals of Cooperation.—History, principles and business relations. (1) A survey of the development, methods, and economic results of great cooperative movements; (2) the organization of producers and consumers abroad, and the present aspects and tendencies in the United States; (3) the principles underlying successful cooperative endeavor and practical working plans for cooperative associations. Credit, 3.
Professor Cance.

171. Special Problems in Cooperation for Economic Purposes.—Study, original investigation, and discussion. Every third year, beginning 1933.
Credit, 3 each semester.
Professor Cance.

174. Advanced Business Accounting.—This course covers the problems of partnership and corporation accounting. Considerable time is spent on problems in amortization, depreciation, and the preparation, analysis and interpretation of financial statements. Credit, 3.
Mr. Larcom.

185. Economic Institutions and Practice in Relation to the State.—Studies in farm relief measures, taxation, bounties, subsidies, government control of commerce and industry. Credit, 2-5 each semester.
Professor Cance.

190. Investigations in Various Problems Related to Economics.—Credits to be determined by time spent and reports submitted.

193. Semiar.—Problems of government and public administration.
Credit, 3.
Assistant Professor Rohr.

200. Thesis.—Research work in economics will be developed by four principal methods; namely: historical, statistical, accounting, and general field investigation. In all instances mastery of research methods includes facility in investigation, tabulation, and interpretation of results.

COURSES FOR MINOR CREDIT ONLY.

54. Corporation Finance.—Types of business organization. Types of securities used for raising capital. Financial structure of the various types of concerns. Administration of income-control; holding company finance; and current control legislation are considered. Credit, 3.
Mr. Larcom.

55. Economics of Consumption.—The purpose of this course is a consideration of the importance of consumption in modern industry and commerce. It includes a study of the laws of consumption, standards of living, sources and factors determining family incomes, and of the administration of these incomes as shown by the expenditures of the nation and of various groups. The relation of consumption to the problems of population and to the development of society is also studied. Lectures, assigned readings, and class discussions.
Credit, 3.
Mr. Larcom.

77. Economics of Foreign Trade.—A study of the principles and practices of international trade, including a survey of historical trends of the foreign trade of the United States; the business methods of foreign traders, foreign exchange. Textbook, lectures, class discussion. Credit, 3.
Assistant Professor Gamble.

81. Elementary Business Accounting.—This course aims to give the student an elementary working knowledge of the principles underlying the accounting system in the gathering, analysis, and interpretation of accounting data and the methods used in accounting and preparing the usual types of business statements for individual proprietorship businesses and partnerships. The use of accounting records as a means of business control, which is emphasized in this course, should be of special value to those students who will later be employed in managerial capacities. Credit, 3.

Mr Larcom.

85. Business Law.—Land, titles, public roads, contracts, commercial paper, and distinctions between personal and real property. Text, written exercises, lectures, and class discussions. Credit, 3.

Assistant Professor Smart.

Education and Psychology.

COURSES FOR MAJOR OR MINOR CREDITS WITH MAJOR ENROLLMENT IN EITHER GROUP OF SUBJECTS.

Courses for satisfaction of a minor may be selected with credit as indicated, from the undergraduate list in the annual college catalogue, except those numbered 26, 54, and 65, provided prerequisites have been satisfied. In addition to regular class hours, graduate students shall, at the option of the instructor, meet the instructor for a specified number of hours per semester in each undergraduate subject for discussion of supplementary assignments. Beginning in September, 1938, each graduate student majoring in Education or Psychology, in addition to course and thesis requirements, will be expected to pass successfully a comprehensive written examination in Education or Psychology.

Education.

102. The Development of Public Education in Massachusetts.—The origin and growth of all types of education under public control from earliest colonial days to the present, with legislation, policies and persons involved.

By arrangement. Credit, 2.

Professor Welles.

103. Problems in Vocational Teaching.—The course deals with problems out of the experiences of vocational teachers in Massachusetts. Constructive assignments bearing upon individual experiences are worked out in harmony with the campaigns for better teaching in vocational schools. Credit, 3.

By arrangement.

F. E. Heald of Vocational Division, State Department of Education.

104. Principles of Vocational Education.—A survey of the objectives, history and legal requirements of vocational education in the United States. Credit, 2.

By arrangement.

F. E. Heald of Vocational Division, State Department of Education.

105. Organization of a Public School Program.—Practical situations faced by superintendents and supervising principals in which things have to be done to set the school machinery in motion. Such considerations as housing, curricula, etc. are worked out to suit a specific community. Credit, 2.

By arrangement.

Professor Welles.

107. Rural and Elementary Graded Schools.—The place rural education still occupies, changes in process, introduction of arts, health programs, curriculum, etc. The problems of principal of graded school, staff, transportation, lunches, vocational program, extracurricular matters, community relations, etc. Credit, 2.

Professor Welles.

Mr. Purvis.

110. Contemporary Education.—Comparative studies of education involving European and United States systems. Interviews, reading, reports.
Credit, 2.
By arrangement.
Professor Welles.
Mr. Purvis.

120. School Laws of Massachusetts.—A review of the legal relations of the school personnel covering the usual experiences in school and community, presented in a series of selected cases having the support of court decisions.
Credit, 2.
By arrangement.
Professor Welles.

137. Socialized Education.—Discussion of the objectives and the various factors involved in a system of education for increasing its social values. A view of education that tries to offset the effects of present idea of individualism.
Credit, 2.
By arrangement.
Professor Welles.

145. Conflicting Principles in Teaching.—A critical analysis of many dualisms in teaching principles in which there is an apparent conflict between two sound ones and an attempt to find the best way to capitalize the good of both.
Credit, 2.
Professor Welles.

167. History of Education.—A survey of educational objectives and practices extending from early times to the present, emphasizing those movements that have most definitely influenced education in many countries.
Credit, 2.
By arrangement.
Mr. Purvis.

178. Apprentice Teaching in Agriculture.—An opportunity offered occasionally to study this type of vocational education by participating in it. The work is that of an assistant teacher under supervision with a schedule of classes to teach and a prescribed line of study to complete. For one or two full semesters off campus.
Credit, 3.
By arrangement.
Professor Welles.
Assisted by F. E. Heald of the Vocational Division, State Department of Education.

179. Educational Tests and Measurements.—The most serviceable tests and scales for measuring school achievement are considered; construction, administration, and interpretation and uses of results are studied and practiced.
Credit, 2.
Mr. Purvis.

181. Curriculum Construction in Secondary Schools.—A study of the principles and techniques involved in curriculum building. Recent programs will be studied and evaluated. Readings and reports.
Credit, 2.
By arrangement.
Mr. Purvis.

182. Secondary School Administration.—This course deals with important problems of secondary school administration taken from actual situations in schools. The general principles involved in supervisory programs, in finance and maintenance, in teacher relationships, in pupil groupings and organizations, etc., are discussed and evaluated.
Credit, 2.
Mr. Purvis.

184. Secondary Education.—The course gives attention to the aims, relations, organization, and functions of the high school and the activities that carry these out through curricula, schedules and extra-curricular organizations.
Credit, 2.
Mr. Purvis.

191. Educational Research and Statistics.—The principles and methods of research with special emphasis upon the technique used in education and psychology. Statistics are studied chiefly from the standpoint of reporting and understanding the results of research. Required in first semester of students who anticipate completion of a thesis in the current year. Credit, 2.

Mr. Purvis.

200. Thesis.—A completed piece of work on an accepted educational problem with necessary review of literature in its field. Required of all students for the advanced degree. (Prerequisite 191.) Credit, 10.

By arrangement.

Professor Welles and Mr. Purvis.

Psychology.

151. Experimental Psychology.—A survey of important experiments in psychology. Special attention is given to the techniques of experimentation and to the apparatus employed. The content of the course is determined partly by the interests of the members of the class. Credit, 2.

Assistant Professor Neet.

152. Physiological Psychology.—This is a study of the physiological correlates of normal and abnormal mental conditions and behavior. Special reference is given to sensory, motor and association processes.

Credit, 2.

Assistant Professor Neet.

153. Survey of Psychology.—A survey of the present status of the fields, schools, and major problems of psychology. The principal methods of psychological research are outlined. Credit, 2.

Assistant Professor Neet.

154. Educational Psychology.—This course deals with the psychological theories involved in the solution of various educational problems. An attempt is made to criticize and evaluate educational theory and practice in this light.

Credit, 2.

By arrangement.

Professor Glick.

164. Seminar in Psychology.—Arranged to include phases of psychology not covered in the outlined courses and also to provide opportunity for greater specialization than the outlined courses may afford.

Credit, 2.

By arrangement.

Professor Glick and Assistant Professor Neet.

180. Industrial and Business Psychology.—The course aims to develop an understanding of the principles and techniques involved in employment, in personal problems, and in the treatment of problems of work, fatigue and motivation. The psychology of advertising and selling will also be considered.

Credit, 2.

Assistant Professor Neet.

185. Abnormal Psychology.—A study of the different types of disorders in human behavior relative to causes, classification, prevention, and treatment. A critical study is made of the various theories and practices of mental hygiene and psychiatry. Credit, 2.

Assistant Professor Neet.

186. Child Psychology.—A study of child and adolescent behavior with special reference to the problems of teachers and parents. Credit, 2.

Assistant Professor Neet.

187. Applied Psychology.—This is a study of the application of psychological principles to various phases of life. Some of the topics considered are personality, development of the emotions, interests, attitudes, social behavior, and legal psychology. Various procedures used in clinical psychology will be considered. Credit, 2.

Assistant Professor Neet.

189. Psychology of Guidance.—A study of the various factors involved in guidance programs in general. Interests, attitudes, and general personality tests are studied, and the psychological devices for measuring these are also considered and applied. Practice is given in administering and scoring tests, and statistical devices are used to interpret results. Credit, 3.
Professor Glick.

193. Theory of Mental Tests.—A critical study of the various types of tests from the psychological, philosophical, and practical points of view.
Credit, 2.
By arrangement.
Professor Glick.

195. Problems in Psychology.—Affords an opportunity for study in any special field of psychology. Credit, 2.
Professor Glick and Assistant Professor Neet.

200. Thesis.—In psychology. Credit, 10.
Professor Glick and Assistant Professor Neet.

Philosophy.

161. History of Philosophy.—A study of the development of Western thought in general from the time of the early Greeks up to the recent past.
Credit, 2.
Professor Glick.

162. Fundamentals of Philosophy.—A study of the various current types of philosophy with emphasis upon evaluation and criticism. Credit, 2.
Professor Glick.

163. Philosophy of Education.—A criticism and evaluation of the various theories and practices in education viewed in the light of historical perspective and present-day science and theory. Credit, 2.
By arrangement.
Professor Glick.

164. Ethics.—A critical study of the fundamental ethical theories and practices both of the past and present, with an attempt to evaluate each in the light of present knowledge and social demands. Credit, 2.
Professor Glick.

197. Seminar in Philosophy.—Arranged to include phases of philosophy not covered in the outlined courses and also to provide opportunity for greater specialization than the outlined courses may afford. Credit, 2.
By arrangement.
Professor Glick.

198. Problems in Philosophy.—The subject matter centers around logic and deals primarily with various methods of investigating truth. Credit, 2.
Professor Glick.

Entomology.

COURSES FOR MAJOR OR MINOR CREDIT.

The credits for the courses listed range in number from 1 to 4.

101. Insect embryology; polyembryony; parthenogenesis, paedogenesis, heterogeny. Mr. Shaw.

102. Advanced insect morphology.
Professor Crampton.

103. Ancestry and development of insects, including fossil forms.
Professor Crampton.

104. Advanced insect histology and physiology. Mr. Shaw.

105. Animal luminosity; chemistry and physics of insect colors.
Assistant Professor Sweetman.

106. Variation in insects; dimorphism and polymorphism; teratology, hermaphroditism and gynandromorphism; hybrids.
Professor Alexander.

110. Mimicry; relation of insects to plant pollination; insect behavior.
Professor CRAMPTON.

111. Insect architecture; insect products of value to man.
Professor CRAMPTON.

112. Geographic distribution of animals, with particular reference to insects; insect migrations.
Professor ALEXANDER.

113. Advanced biological control of insects and weeds.
Assistant Professor SWEETMAN.

114. Advanced animal ecology.
Assistant Professor SWEETMAN.

115. Chemical, cultural, and mechanical control of insects.
Assistant Professor SWEETMAN.

116. Insect photography and methods of preparing illustrations.
Assistant Professor SWEETMAN.

117. Field and laboratory methods in entomological research.
Assistant Professor SWEETMAN.

118. Legislation regarding insects and insecticides.
Assistant Professor SWEETMAN.

125. History of entomology and classifications.
Professor CRAMPTON.

126. Lives and works of prominent entomologists.
Professor ALEXANDER.

127. Abundance of insects; important public and private collections.
Professor ALEXANDER.

128. Type categories; genotypes, types of species; leading specialists in the various orders of insects.
Professor ALEXANDER.

129. The international code of zoological nomenclature and the opinions delivered thereon.
Professor ALEXANDER.

140. COCCIDIOLOGY.—A study of the scale insects, their structure; habits; technique of mounting; identification; control.
2 2-hour laboratory periods. Credit, 2.
Professor CRAMPTON.

141. CLASSIFICATION OF MINOR ORDERS OF INSECTS.—Taxonomy of groups belonging to the smaller orders.
1 2-hour laboratory period. Credit, 1.
Professor ALEXANDER.

180. SEMINAR.—Reports on the current literature of entomology; special reports by resident and visiting speakers. Held in conjunction with the regular monthly meetings of the Fernald Entomological Club.

200. THESIS.—Original work on one or more topics in insect morphology, ecology, systematic entomology, or in the fields of medical entomology, insect physiology, insecticides, biological control or apiculture. The thesis requires from one-half to two-thirds of the total working time of the student in his major field.

COURSES FOR MINOR CREDIT ONLY.

53, 80.	APPLIED ENTOMOLOGY.	Credit, 6.
55, 56.	INSECT TAXONOMY.	Credit, 6.
57.	INSECT MORPHOLOGY.	Credit, 4.
66, 85.	APICULTURE.	Credit, 6.
72.	FOREST ENTOMOLOGY.	Credit, 3.
74.	MEDICAL ENTOMOLOGY.	Credit, 2.
79.	INSECT ECOLOGY.	Credit, 3.
81.	INSECT PHYSIOLOGY.	Credit, 3.

Floriculture.

COURSES FOR MAJOR OR MINOR CREDIT.

A definitely outlined major or minor in floriculture is not catalogued at present but such a course may be arranged for individual students. The nature of the work to be taken up will depend upon the previous training and the type of problem desired by the candidate. Application should be made to the head of the department.

150. CURRENT LITERATURE.—A review of scientific literature relating to floricultural practices, including various phases of greenhouse management, soils, fertilizers, plant propagation, insect pest and disease control, and other pertinent subjects. Credit, 3.

126. GARDEN MATERIALS.—Studies of specific plants or groups of plants which are used in gardening work. Questions concerning nursery methods of handling such plants are also included. Credit, 3.

175. COMMERCIAL FLORICULTURE.—Problems relating to factors concerned with the commercial production of flowers and plants under glass. Opportunity is also given for study of factors concerned with methods of distribution. Credit, 3.

179. CONSERVATORY PLANTS.—A consideration of subjects dealing with plant materials which are used primarily in conservatories for display purposes and in gardens in warmer climates. Credit, 3.

190. HISTORY OF FLORICULTURE AND FLORICULTURAL LITERATURE.—Consideration of men and events that have influenced the development of floriculture. Brief survey of floricultural literature. Required of all graduates in floriculture. Credit, 3.

200. THESIS.—For candidates taking major work in floriculture. Credit, 10.

COURSES FOR MINOR CREDIT ONLY.

51.	GREENHOUSE MANAGEMENT.	Credit, 3.
52.	FLORAL ARRANGEMENT.	Credit, 3.
75.	COMMERCIAL FLORICULTURE.	Credit, 3 each semester.
79.	CONSERVATORY PLANTS (1938-39).	Credit, 2.
81.	HERBACEOUS GARDENS AND BORDERS (1939-40).	Credit, 3.
82.	SEMINAR.	Credit, 3.

Food Technology.

Opportunity for advanced study in food technology is provided in order that qualified students may better prepare themselves to serve the numerous industrial interests engaged in providing the consuming public with a more desirable food supply. The plan for study arranged for this major while intended to be flexible requires the student to confine himself largely to the graduate courses offered in the following fields: Bacteriology, Chemistry, Dairy Industry, Horticultural Manufactures, and Human Nutrition. These courses, if properly selected, will satisfy both major and minor requirements. The proportionate contribution of each department will depend upon the student's special interests within the field but a minimum of six credits must be earned in each of the departments contributing to this major. Candidates for a degree in this major are assigned to an Advisory Committee composed of representatives of the departments concerned with the Director of the Graduate School as Chairman. This Committee will direct the student's program in the hope that a procedure may be arranged that will provide most adequate facilities for the expression of individuality. The general requirements for a degree in food technology conform to those specified for the doctor of philosophy degree as provided by several departments except that this major offers a wider range of subject matter. Students interested should consult the Director of the Graduate School.

Forestry.

COURSES FOR MINOR CREDIT ONLY.

59. Forest Economics.—The use of land for forest purposes in New England with special reference to the recreational and esthetic aspects of such use. Individual problems with conferences and assigned readings. Credit, 3.

60. Forest Management.—A study of the small unit forest in New England with special reference to the determination of the volume and value of the growing stock and its proper utilization. Individual problems with conferences and assigned readings. Credit, 3.

61. Forest Improvement.—A study of the intermediate cuttings and other practical silvicultural methods applicable in the improvement and renovation of New England forest stands. Field work, conferences and assigned readings. Credit, 3.

62. Forest Utilization.—A study of the uses of wood with special reference to the tree species of New England. Emphasis will be placed on individual field work and library research in the manufacture, merchandising, and distribution of forest products. Credit, 3.

69. Wildlife Administration.—A study of the political and economic background of wildlife administration, including the history and present status of modern wildlife practices. Credit, 3.

70. Life History of Wild Animals.—A quantitative study of the life requirements of game animals or of animals used as food or competing for the food of game animals. Credit, 3.

71. Wildlife Surveys.—A quantitative study of the abundance, annual yield and ecological relationships of wild animals. Credit, 3.

72. Nutrition of Wild Animals.—A quantitative study of the food habits and nutritional requirements of wild animals. Credit, 3.

73. Problems in Aquaculture.—A study of the factors involved in the management of water resources. Credit, 3.

HISTORY AND SOCIOLOGY.

History.

COURSES FOR MINOR CREDIT ONLY.

151. Government.—Forms and methods of the governments of Europe; historic types and theories of government; progress and problems of democracy, and new reform movements in organization and administration; new tendencies towards social legislation and extension of governmental control. Credit, 3.
Professor Mackimmie.

153. Modern European History.—The political and social history of the principal countries of Europe from 1500 to 1830. Credit, 3.
Professor Mackimmie.

157. Seminar in United States History, 1763-1850.—Problems in political, social, and economic phases. Credit, 2.
Assistant Professor Cary.

160. History of the United States.—Emphasis on westward expansion, social and economic change as factors influencing political development. To be offered 1939-40. Credit, 3.
Assistant Professor Cary.

161. Ancient Greek History.—Given in alternate years. 1937-38. Credit, 3.
Professor Mackimmie.

163. Ancient Roman History.—Given in alternate years. 1938-39. Credit, 3.
Professor Mackimmie.

165. Nineteenth Century England.—Victorian society and ideals; Industrial Revolution and its effects; growth of democracy. Emphasis on social conditions and thought movements. Given in alternate years. 1937-38. Prerequisite, History 32. Credit, 3.
Assistant Professor Caldwell.

167. Stuart England.—The development of limited monarch is treated, but particular emphasis is placed on social, religious, and intellectual aspects of English life in the period. Wide reading in contemporary sources. Given in alternate years. 1938-39. Credit, 3.
Prerequisite, History 31 or 32. Assistant Professor Caldwell.

175. Medieval Europe.—Europe from the barbarian invasions to the Renaissance. Social and economic conditions, development of national monarchies, the Church and religion, medieval culture. Credit, 3.
Assistant Professor Cary.

176. The History of the Renaissance.—The later Middle Ages. The Church at the height of power. The rise of nationalities. The Italian Towns. The New Learning and its relation to Art, Science, Invention, Geographical Discoveries. Spread and effects of the Renaissance. Credit, 3.
Professor Mackimmie.

182. Problems in American History.—A course for those who wish advanced work. Selected problems will be investigated through the study of source material and extensive reading in secondary literature. Credit, 3.
Assistant Professor Cary.

Sociology.

COURSES FOR MAJOR OR MINOR CREDIT.

153. Anthropology and Culture.—A study of prehistoric human life and culture. Credit, 3.
Assistant Professor Cutler.

154. Civilization and Culture.—A study of human social and cultural development, including agricultural, with reference to the sources of our knowledge; attention is given to the results of recent scholarship in this field. Credit, 3.
Assistant Professor Cutler.

175. Social Reforms.—An appraisal of present-day efforts to adjust our social conditions, in country and city, to the situation created by the industrial revolution; a study is made of recent literature on this subject; social case work is defined. Credit, 3.
Assistant Professor Cutler.

177. Sociological Field Work.—Students, under direction of the instructor, analyze and organize such sociological knowledge as they acquire through their own social service experience, and include all in a comprehensive report; projects must be approved in advance by the instructor; methods of research are studied. Credit, 3.
Assistant Professor Cutler.

179. Seminar.—Graduate students render reports on research in which they engage, and upon selected portions of current sociological literature. The reports serve as the basis for general discussion. Credit, 2.
Assistant Professor Cutler.

182. American Standards of Living.—A study of the relations of life to people's ideals and income. Credit, 3.
Assistant Professor Cutler.

183. Social Conditions of Old World Life.—A sociological investigation of life in Europe, the Orient, and the Far East; co-operative enterprise in Denmark; agriculture in China after one hundred twenty generations; racial traits. Credit, 3.
Assistant Professor Cutler.

187. Town and Village Life.—The agricultural village; the small town in relationship to its environing neighborhoods; rurbanization; part-time farming. Credit, 3.
Assistant Professor Cutler.

188. The Modern City.—A survey of industrial and mercantile centers with their problems of poverty, health and sanitation, planning and zoning, the "unearned increment," and disrupted primary groups; the social, administrative and economic organization of cities; metropolitan planning. Credit, 3.
Assistant Professor Cutler.

189. Utopias and Other Social Movements.—A study of utopias in literature and in fact; the literature of rural life; contemporary social movements.
Credit, 3.
Assistant Professor Cutler.

190. Local Government.—Proposed improvements in local government.
Credit, 3.
Assistant Professor Cutler.

191. Community Leadership.—Qualities and methods making for successful leadership. Credit, 3.
Assistant Professor Cutler.

192. Social Conditions in the Caribbean Region.—A sociological study of life and industry in the American possessions and protectorates; relation of the West Indies to the United States; the peon mind. Credit, 3.
Assistant Professor Cutler.

193. The League of Nations.—Social and agricultural problems in their international aspects. Credit, 3.
Assistant Professor Cutler.

200. Thesis.—Upon an approved subject, and must be a valuable contribution to knowledge. Especial stress is laid upon the feature of originality in the case of candidates for the doctorate. Credit, 10.

Home Economics.

COURSES FOR MAJOR OR MINOR CREDIT.

101. Problems in Nutrition.—Adapted to meet the interests and needs of individual students. These studies might include an application of the principles of chemistry, psychology and physiology to nutrition; child nutrition, dietotherapy, nutrition in relation to health education. Credit, 3.

104. Advanced Nutrition.—A study of nutrition from both the chemical and physiological aspects with emphasis on the metabolism of proteins and related compounds, lipoids, carbohydrates, minerals, and vitamins. Recent advances in each field of nutrition research are discussed. This course is available to graduate students majoring in related fields as well as to majors in Nutrition provided they offer the necessary prerequisites.
Prerequisites, Chemistry 79; Physiology 32. Credit, 3.

111. Nutrition Seminar.—A review of current literature on selected subjects and the preparation of bibliographies and special reports by the students.
Credit, 1 each semester.

200. Thesis.—Individual research in the field of nutrition and the preparation of an acceptable thesis reporting results and analysis of such studies.
Credit, 10.

COURSES FOR MINOR CREDIT ONLY.

75. Economics of the Household.—A study of personal and family standards of living in the modern home, the economic relations of the household, and the use of time, energy and money as a means to influence the home situation.
Credit, 3.

83. Problems in Home Economics.—An application of home economics to special problems. Credit, 3 each semester.

86. Child Development.—A study of the growth and development of the child, the care of children at various ages, treatment in behavior problems, and the influence of environment in shaping personality. Credit, 3.

87. Advanced Clothing Problems.—A study of advanced clothing problems with special emphasis on economic problems involved. Costume designing and modeling are included which give opportunity for experimentation in designing. Credit, 3.

89. Diet Therapy.—This course offers a brief outline of the causes, symptoms, and general treatment of the various diseases in which the nutritional condition of the patient has significance. The course includes the dietetic treatment and control of gastrointestinal disorders, obesity, cardio-vascular-renal diseases, anemia, fevers, diabetes, food allergy and the deficiency diseases. Field trips are planned to the dietetic departments of nearby hospitals.
3 class hours. Credit, 3.
Prerequisites, Home Economics 52; Chemistry 79; Physiology 32.

91. Institutional Foods and Management.—This includes a study of the principles of organization, personnel management, the administration of the food department, food costs, operating expenses, and the special function and duties of the dietitian. Laboratory work will be at the College Dining Hall and in various other institutions in the vicinity. It is expected that students will enroll for the work of both semesters. Enrollment limited.
1 class hour. 2 2-hour laboratory periods. Credit, 3.

Horticultural Manufactures.

COURSES FOR MAJOR OR MINOR CREDIT.

101. Food Industry Problems.—A series of problems, exercises and assignments covering a wide variety of subjects. Definite credit is assigned to each problem. Credit, 2-6.

111. Seminar.—Literature assignments, preparation of reports, and round-table discussions, special lectures. Credit, 1-2 each semester.

161. Food Technology.—Commercial practices. Advanced laboratory work in the manufacture of canned meats, marine products, vegetables, soups, pickled products, maple and table syrups, fountain syrups and carbonated beverages. Two 3-hour laboratory periods. Credit, 3.

162. Food Technology.—Commercial practices. Advanced laboratory work and lectures on such manufactured food products as jellies, jams, marmalade, pectin, juices and by-products. A study of chemical preservatives in foods. Food laws. Fermented foods and beverages. Refrigeration, freezing, drying and smoking as applied to food preservation and storage. Inspection of plants. One lecture, one 3-hour and one 2-hour laboratory period. Credit, 3.

175. Examination of Food Products.—Factory and laboratory methods. Grades and quality factors; physical, chemical, microbiological and microscopical methods and interpretation of results. Government and trade standards.
1 4-hour laboratory period. Credit, 2.

182. Confections and Special Products.—Candied and glacéd fruits, and preserves; candies, sugars and accessory preserving materials. Credit, 2.

200. Thesis.—Research on some suitable topic relating to the technology of foods. Facilities for nutrition research are provided by well-equipped chemical and small animal laboratories. Credit, 10.

COURSES FOR MINOR CREDIT ONLY.

51. Fruit and Vegetable Products.—This course, together with 52, gives the student a general elementary knowledge of the science and practice of food manufacture. Principles and theories of the various methods of food preservation are the basis for classroom exercises. The laboratory work during the first semester deals largely with the preservation of the autumn fruits and vegetables, small fruit products, freezing and dehydration.
1 class hour. 2 2-hour laboratory periods, credit, 3.

52. Miscellaneous Products.—This is a continuation of 51. The laboratory work includes pickles and pickle products, maple products, citrus products, fruit syrups, soups, condiments and the canning of meats, poultry, and the spring vegetables.
1 class hour. 2 2-hour laboratory periods, credit, 3.

61. Commercial Practices.—A survey of commercial practices in the manufacture and preservation of food products. This will involve a study of equipment, factory arrangement, sanitation and government regulations, the operation of types of commercial equipment in quantity production.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Prerequisites Horticultural Manufactures 51 and 52.

62. Food Preservation Problems.—This is a continuation of 61. The class exercises will deal largely with a survey study of the sources of raw materials, commercial methods of manufacture, packing and distribution of the more common foods, also a study of the more important contributions of research. Laboratory work will include the formation of research projects, interpretation of research data. The use of preservatives, the simple analysis of foods and the commercial practices as applied to preservation of such materials as are available: fish, meats, poultry, and spring vegetables.
1 class hour. 2 2-hour laboratory periods, credit, 3.
Prerequisite Horticultural Manufacture 61.

Landscape Architecture.

COURSES FOR MAJOR OR MINOR CREDIT.

175. Theory of Landscape Architecture. Credit, 3.
Professor Waugh.

176. Civic Art. Credit, 3.

178. History of Architecture. Credit, 3.
Professor Harrison.

181. Advanced Design. Credit, 3.

182. Residence Grounds Design. Credit, 3.
Professor Harrison.

183. Construction and Maintenance. Credit, 3.
Professor Harrison.

190. Theory.—Special studies in the history and theory of art and of landscape architecture. Credit, 3.
The Department.

191. Design.—Individual problems in any or all branches of design, including estates, parks, playgrounds, public grounds, etc. Credit, 3.
The Department.

192. Construction.—Individual problems by arrangement, including engineering, estimating, cost accounting, and methods of construction. Credit, 3.
The Department.

194. Practice.—Professional field work under supervision, conducted upon going projects as opportunity offers. Credit, 3.
By arrangement.
The Department.

195. Seminar.—Regular meetings for conference. Credit, 1.
Professor Waugh.

196. Presentation.—Studies in drafting, pen and crayon, rendering, water coloring, etc. Credit, 3.
Mr. Robertson.

197. Architecture.—Problems in architecture. Credit, 3.
Mr. Robertson.

198. CIVIC ART.—Studies and problems in civic art, including city planning, country planning and subdivision, public policies, and administration in park and forest recreation, and landscape conservation. Credit, 3.
Professor WAUGH.

200. THESIS. Credit, 10.

COURSES FOR MINOR CREDIT ONLY.

51. MAPPING AND TOPOGRAPHY. Credit, 3.
Professor HARRISON.

52. ELEMENTS OF LANDSCAPE ARCHITECTURE.—Engineering details, grades, roads, drainage. Credit, 3.
Professor HARRISON.

54. GARDEN DESIGN.—Elementary principles of structural design as applied to the simpler garden forms. Credit, 3.
Professor WAUGH.

FOR THE DEGREE OF BACHELOR OF LANDSCAPE ARCHITECTURE.

To receive the degree of Bachelor of Landscape Architecture each candidate will be required:

1. To have received the degree of Bachelor of Science or Bachelor of Arts from a reputable institution.
2. To have completed as a prerequisite 24 semester credits in technical courses in landscape architecture, substantially equivalent to the technical courses now required in the major in landscape architecture at this college.
3. In addition, to have completed in residence at this institution 30 credits in landscape architecture and closely related subjects prescribed by the department. (See Fifth Year Program below.)
4. To have maintained a standing of 70 or better in all courses of the Fifth Year.
5. To be able to speak and write good English.
6. To have received the unanimous approval of the faculty of the department and the usual vote of approval of the faculty of the Graduate School.

FIFTH YEAR PROGRAM.

The regular program of studies for the Fifth Year, subject to minor changes, is as follows:

First Semester.

LANDSCAPE ARCHITECTURE 101.—General Design. Professor BLUNDELL.
LANDSCAPE ARCHITECTURE 102. Ecology and Physiography. Professor WAUGH.
LANDSCAPE ARCHITECTURE 107. Specifications, Estimates, Costs.
Professor HARRISON.
LANDSCAPE ARCHITECTURE 109. Landscape Sketching (Elective).
Professor ROBERTSON.
ARCHITECTURE 101. Elementary Problems. Professor ROBERTSON.
ENGLISH. Assigned.

Second Semester.

LANDSCAPE ARCHITECTURE 102.—Landscape Forestry.
Professor HOLDSWORTH.
LANDSCAPE ARCHITECTURE 106.—General Design.
Professor HARRISON.
LANDSCAPE ARCHITECTURE 112.—Professional Practice.
Professor WAUGH.
LANDSCAPE ARCHITECTURE 114.—Architectural Sketching (Elective).
Professor ROBERTSON.
ARCHITECTURE 102.—Structural Problems.
Professor ROBERTSON.
English, Assigned.

Note. Each course in this group is rated at 3 semester credits. Minor deviations from this program may be made at the discretion of the department.

Mathematics.

COURSES FOR MINOR CREDIT ONLY.

75. Hydraulics.—Hydrostatics, which deals with pressure gages, pressures on surfaces and immersed and floating bodies, is first considered. Hydrokinetics, which includes flow through orifices and tubes, over weirs and dams, through pipes and open channels, is dealt with next. Hydrodynamics, which considers turbines and pumps, will be taken up briefly. Where possible current practical problems in hydraulics such as flood control, hydro-electric power development and erosion control are discussed during the class period.
3 class hours. Credit, 3.
Prerequisite, Physics 25, Mathematics 28. Mr. Marston.

76. Water Supply.—This course considers the engineering aspects of public water supply systems and includes the following topics: quantity of water required; sources of supply; rainfall; evaporation and percolation; flow of streams; ground water; quality of water supplies; water-works construction; intake works; dams; methods of purification; distribution systems.
3 class hours. Credit, 3.
Prerequisite, Mathematics 75 or permission of instructor. Mr. Marston.

91, 92. Differential and Empirical Equations.—Courses dealing with the methods of solution of the simpler forms of differential equations and their applications to analogous operations in the applied sciences. Attention is also given to the various methods of determining empirical equations from observed data, and the interpretation of the various constants involved.
Prerequisite, Mathematics 51. Credit, 2 each semester.
Associate Professor Moore.

55. Mathematics of Finance.—The mathematical principle of simple and compound interest, annuities, depreciation, valuation of bonds, insurance, building and loan associations. The development and application of aids to computation in problems arising from financial transactions.
3 class hours. Credit, 3.
Prerequisite, Mathematics 1. Assistant Professor Miller.

62. Statistics.—The fundamental mathematical principles of statistical analysis. A discussion of averages, measures of dispersion, frequency and probability functions, correlation, random sampling. This course in conjunction with Agricultural Economics 79 should provide the student with a good understanding of the application of statistical method and the interpretation of results.
3 class hours. Credit, 3.
Prerequisite, Mathematics 51. Mr. Boutelle.

Olericulture.

COURSES FOR MAJOR AND MINOR CREDIT.

150. Current Literature.—A review of scientific papers relating to research work in Olericulture as affecting various cultural practices both in the greenhouse and in the field. Credit, 3.

151. Nutrition of Vegetable Crops.—Readings, laboratory and greenhouse work related to problems of soil management and fertilization practices. Credit, 3.

152. Cultural Problems.—A study of fundamental factors such as soil moisture, light, humidity and temperature as they influence cultural practices. Credit, 3.

175. Advanced Systematic Olericulture.—A critical study of vegetable types as to nomenclature, identification, and classification. Credit, 3.

181. Seminar.—A study of research work related to Olericulture. Each student will be required to present papers on assigned readings. Credit, 1.

200. Thesis.—Research on some suitable topic relating to a specific phase of Olericulture. Credit, 10.

COURSES FOR MINOR CREDIT ONLY.

25. General Olericulture. Credit, 3.
51. Principles of Olericulture. Credit, 3 each semester.
75. Systematic Olericulture. Credit, 3.
76. Greenhouse Crops. Credit, 3.
78. Commercial Olericulture. Credit, 3.

Physical Education.

COURSES FOR MINOR CREDIT ONLY.

Men.

155. History and Purposes of Physical Education.—A study of the history of the development of the various systems of physical education and of the aims and ideals of present-day physical educators. Credit, 2.
Professor Gore.

156. Organization and Administration.—Considers the organization and administration of a department of physical education. Credit, 2.
Professor Gore.

171. Special Problems Course in Physical Education.—Presentation and discussion of research work in physical education, health education, and athletics. Credits, 3 each semester.
The Department.

174. Recreation Organization and Administration.—A study is made of the executive and administrative problems arising out of the conduct of a community-wide recreation program. Credit, 3.
Professor Gore.

177. Anatomy General.—A course in structural anatomy, including bones, ligaments, muscles, circulation, digestion, nervous system and respiration. Credit, 3.
Professor Radcliffe.

178. Anatomy Applied.—A course in applied anatomy or kinesiology aimed to give the anatomical knowledge and application basal to a thorough understanding of the mechanical problems in apparatus, athletic and corrective exercises. Credit, 3.
Professor Radcliffe.

Physics.

COURSES FOR MINOR CREDIT ONLY.

51, 52. Magnetism, Electricity, Photo-Electricity, Thermionics, and Application.—Course 51 deals mainly with direct currents, Course 52 with alternating currents, applications of thermionics, and photo-electricity. These courses are planned to give the student a good grounding in theory and methods of measurement in the subjects indicated, which are useful in many fields of investigation. Modern methods are stressed and instruments of precision are used.
2 class hours. 1 2-hour laboratory period, credit 3 each semester.
Professor Powers.
Prerequisites, Physics 26 for Course 51; Physics 51 for Course 52, Math. 28.

53. Optics.—An intermediate course in the theory of light. Work in geometrical and physical optics is done. Precision instruments are used in the laboratory.
2 class hours. 1 2-hour laboratory period, credit 3.
Assistant Professor Alderman.
Prerequisites, Physics 26, Math. 28.

54. Heat and Thermodynamics.—A study of heat exchanges and energy changes due to heat in systems of matter. The subject material and experimental methods are useful in other branches of science.
2 class hours. 1 2-hour laboratory period, credit 3.
Assistant Professor Alderman.
Prerequisites, Physics 25 and 26, Math. 28.

56. Mechanics.—Development of the fundamental concepts of dynamics with applications to particles and rigid bodies in translation and rotation. 3 class hours (1 laboratory period may be substituted for 1 class hour.) Credit, 3.
Mr. Ross.

75, 76. Advanced Experimental Work in Selected Topics.—These courses are chiefly experimental, and the subject matter is adapted to the needs of the individual student. The research viewpoint is emphasized.
3 2-hour laboratory periods, credit 3 each semester.
Professor Powers.

Prerequisites, Physics 25, 26, and 52; or 53 and 54; Math. 28 and 51.

85, 86. Modern Physics.—Typical subjects studied are theories of the atom, radiation, quantum theory, spectra, X-ray analysis.
3 class hours. Given at option of instructor. Credit, 3 each semester.
Professor Powers.

Prerequisites, Physics 25, 26, 51-54; or equivalent; Math. 28, 51.

Pomology.

COURSES FOR MAJOR OR MINOR CREDIT ONLY.

101. Experimental Methods.—A critical study of the methods of research that have been used or may be helpful in pomological work. The following topics will be considered from the point of view of the investigator in pomology:—

1. Statistical methods.
2. Measures of growth and yield.
3. The conduct of plot experiments.
4. Methods of soil study in their relation to pomological research.
5. Chemical methods of pomological research.
6. Methods of physiology applicable to fruit plants.
7. Microchemistry.

Credit, 10.

102. Pomological Research.—A critical survey of past and current research work in pomology. Tri-weekly meetings for reports and discussions will be held. The following topics will be taken up:—

1. Orchard soil management.
2. Soil fertility and fertilizers.
3. Physiology of pruning fruit plants.
4. Fruit bud differentiation.
5. Sterility and fertility.
6. Genetics of fruit plants.
7. Climatology and winter injury.
8. Special problems in propagation and nursery management.
9. Spraying machinery and equipment.
10. Special practices.

Credit, 10.

103. Advanced Laboratory Work.—Each student will be required to become familiar with the research work of the department and to have a share in it. So far as this has value as graduate work, he will receive credit. Credit, 5.

104. History of Pomology.—The men, institutions, and other influences that have contributed to the development of the science and art of pomology.
Credit, 2.

105. Horticultural Taxonomy.—A study of the history and development of plant classification with special reference to horticultural plants. A study of modern classification carries with it an expression of opinion as to the evolution of cultivated plants. Credit, 2-3.

106. Advanced Systematic Pomology.—The principles of systematic pomology, including a study of nut and subtropical fruits not usually dealt with in undergraduate courses. Opportunity is also offered for study of leaf and general tree characters of nursery and orchard trees and the relationship of varieties as indicated by these characters as well as those of the fruit. Credit, 5.

200. THESIS.—Each student will be required to carry out an original investigation of an assigned problem. In planning, executing and interpreting the data of this problem he must show marked ability. The results are embodied in a thesis to be passed upon by the Department and the Graduate Staff.

Credit, 10-30.

COURSES FOR MINOR CREDIT ONLY.

POMOLOGY 26, SMALL FRUITS.—A study of the growing of small fruits, including raspberries, blackberries, strawberries, currants, blueberries, and grapes, dealing with such questions as varieties, selecting a site for the plantation, soils, fertilizers, pruning, harvesting, marketing, etc.

2 class hours. 1 2-hour laboratory period, credit, 3.

POMOLOGY 53. GENERAL POMOLOGY.—A study of the most improved practices in fruit production, including such questions as the selection of orchard sites and soils, laying out and setting the orchard, the structure and growth of fruit plants; the bearing habits, pruning and training of fruits; fertilizers, pollination, winter injury, etc.

2 class hours. 1 2-hour laboratory period, credit, 3.

POMOLOGY 56. SPRAYING.—(a) Spraying materials, their composition, manufacture, and preparation for use; the desirable and objectionable qualities of each material; formulas used, cost, tests of purity. (b) Spraying machinery, including all the principal types of pumps, nozzles, hose and vehicles; their structure and care. (c) Orchard methods in the application of the various materials used, with the important considerations for spraying each fruit and for combating each orchard pest. This course is designed especially to familiarize the student with the practical details of actual spraying work in the orchard.

1 class hour. 2 2-hour laboratory periods, credit, 3.

POMOLOGY 75. SYSTEMATIC POMOLOGY (1938-39).—A study of the more important kinds and varieties of fruits grown in the United States, their relationships and nomenclature. Particular emphasis is placed on the identification, classification and value of varieties including a study of the characters of the plant as well as the fruit. Given in alternate years.

1 class hour. 3 2-hour laboratory periods, credit, 4.

POMOLOGY 77. COMMERCIAL POMOLOGY (1937-38).—The picking, handling, storing, and marketing of fruits, including a discussion of storage houses, fruit packages, and methods of refrigeration, grading and packing. This course also considers the leading American and foreign centers of fruit production as they affect our own fruit industry through competition here and abroad. Given in alternate years.

2 class hours. 1 2-hour laboratory period, credit, 3.

POMOLOGY 81. ADVANCED POMOLOGY.—A consideration of the scientific principles governing the growth and behavior of fruit-bearing plants. Special attention is given to a critical survey of the more important research work in the field of Pomology.

2 class hours. 1 2-hour laboratory period, credit, 3.

Prerequisite, Pomology 53.

POMOLOGY 82. ADVANCED POMOLOGY.—A continuation of Course 81.

2 class hours. 1 2-hour laboratory period, credit, 3.

Prerequisite, Pomology 81.

POMOLOGY 83. SEMINAR.—Advanced study of problems relating to the business of fruit growing. Each student is assigned a major problem in lines of work in which he is particularly interested. He pursues his studies both by reading and research, and the materials obtained will be worked into theses, which are presented to the seminar for discussion. No lectures are given, but seminar meetings are held for one period each week.

1 class hour. Credit, 1 each semester.

THE DEPARTMENT.

Poultry Science.

COURSES FOR MAJOR OR MINOR CREDIT.

101. Science of Poultry Husbandry.—A review of the entire field of poultry literature, including books, bulletins, journals, and other technical publications to furnish a comprehensive background of the present status of knowledge in poultry science. Written reports will be required. Credit, 3.

102. Poultry Research Problems.—A critical review of research, experimentation, and demonstration that has been carried out by workers at the various stations in this and other countries. A study of poultry problems in foreign countries together with the outstanding needs in the United States with a view of discovering the needs for fundamental research. Credit, 3.

103. Advanced Genetics.—A lecture course offered during both semesters dealing with the experimental study of genetics in relation to both plant and animal breeding. The course is open to qualified graduate students in any line of study. Credit, 3.

104. Interpretation of Data.—A complete analysis of available experimental data on various phases of poultry breeding is undertaken by the student. The student is required to make his own interpretations and to report the results of his analysis. Credit, 3.

105. Research in Breeding.—Students may carry on definite experiments in poultry breeding. All research work will be confined to the field of pure and applied genetics. Problems concerned with both physical and physiological characters may be studied. Credit, 5.

106. Feeding and Nutrition.—A study of the relation of various feeds to the morphology and physiology of the fowl. Special attention is given to the effects of various nutrients on growth, sexual maturity, egg production, character of plumage, and condition of flesh. Complete rations as well as methods of feeding are fully considered. Credit, 5.

107. Brooding.—Studies will be made upon the relation between viability and rate of growth and the following topics: type of brooder, number of chicks in brood, ventilation, humidity, sanitation, exercise, and weather conditions; also a comparison of natural methods with artificial methods of rearing chicks. Credit, 3.

108. Incubation and Embryology.—A number of problems of a practical, scientific, and mechanical nature relating to incubation are considered. The work in embryology is of an advanced nature, dealing with its relation to morphogenesis and heredity, and presupposes an elementary knowledge of the embryology of the chick. Credit, 3.

110. Genetics and Evolution.—A series of lectures dealing with the genetics of evolution. The course is designed to follow Course 103 and to stress the relation of evolution to genetics. The course is open to all qualified graduate students. Credit, 3.

200. Thesis.—Research work may be carried out in the following lines: breeding, nutrition, brooding and incubation, and embryology. Originality and thoroughness are particularly emphasized. Credit, 10-30.

COURSES OFFERED FOR MINOR CREDIT ONLY.

80. Poultry Problems.—Open to seniors and graduate students. The course consists of problems chosen by the students under the guidance of the department. Credit, 3.

Veterinary Science.

COURSES FOR MINOR CREDIT ONLY.

75. Comparative Veterinary Anatomy.—The structures of the horse, cow, sheep, and pig are studied.
3 lectures a week. Credit, 3.

76. General Veterinary Pathology.—The principles of pathology and their application as related to diseases of domesticated animals are considered. 3 lectures a week. Credit, 3.

Zoology and Geology.

COURSES FOR MINOR CREDIT ONLY.

Zoölogy.

65, 66. Comparative Vertebrate Zoology. Credit, 3 each semester.

69, 70. Comparative Invertebrate Zoology. Credit, 3 each semester.

75, 76. Vertebrate Embryology. Credit, 3 each semester.

91. Special Problems. Credit, 3 each semester.

Geology.

52. Descriptive and Determinate Mineralogy. Credit, 3.

61. Elements of Petrology. Credit, 3.

62. Historical Geology. Credit, 3.

101, 102. Special Problems. Credit, 3 each semester.

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